

THE PLOUGH

THE LOOM AND THE ANVIL.

FARMER AND MECHANIC.

DEVOTED TO SCIENTIFIC AND PRACTICAL AGRICULTURE—MANUFACTURES—MECHANICS—
NEW INVENTIONS—A SOUND PROTECTIVE POLICY—FARM BUILDINGS—GOT-
TAGH DESIGNS—FRUIT TREES—FLOWERS—GARDENING—RENS,
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The Plough, the Loom, and the Anvil.

PART II.—VOL. VI.

JUNE, 1854.

No. 6.

GEOLOGY.—COAL FORMATIONS.

THE mining of coal or iron is by no means so simple a matter as one who has not studied the subject may suppose. The error often made here is not unlike that which is entertained of gold-hunting in California. Many have had the impression that the precious metal is readily found there, in larger or smaller lumps, scattered everywhere upon the surface, and that the only work of the adventurer was to pick it up. Those who have read "Golden Dreams and Leaden Realities," or who have in any way become familiar with the modes of life and the severity of labor usually required for success in that field, have come to a very different conclusion. This pursuit is fraught with many difficulties, the result of the numerous disruptions and other disturbances, through which the crust of the earth has passed.

It has been supposed that the surface of the sea has been changed, its line of altitude having been depressed. More careful observation has led to the conclusion that, instead of this, the surface of the land has been elevated. It was thought, for example, that the waters of the sea once covered the beds of fossil rocks, which were always at their present level. The opinion now prevails that these beds have been elevated, upheaved; and this conclusion seems almost necessary, when we look into the processes which it is well known are now actually in operation. The evidence is conclusive, that in parts of Sweden, and along the gulf of Bothnia, a slow but constant upheaving movement has been going on for centuries. The relative level of the water and the land is essentially changed; and that this change is not in the sea is evident, because, among other reasons, this would necessarily involve a change in the levels of all oceans or seas in connection with these waters; that is, a change of level throughout the great system of oceans. But this phenomenon is by no means universal, while, on the other hand, there are localities, as in the southern part of Sweden, where the land has become comparatively lower than it once was. Where the change described has in fact taken place, to a greater or less extent, the ratio or extent of change has been very unequal, varying from a few inches to several feet in a century.

But though the general level of the seas remains the same, there is evidence, as we have before taken occasion to remark, that the level of the bottom of the sea has in many instances been essentially changed. One of the most obvious proofs of this fact is found in the condition of many coral islands. It is well known that the coral insect can not live many fathoms below the surface of the water, and yet coral formations are known to exist at very great depths. Hence the elevations, on which these formations rest, must have been materially depressed. Again, other formations of this sort have been

greatly elevated. Such are many of the islands in the Pacific ocean, and in other regions very remote from these.

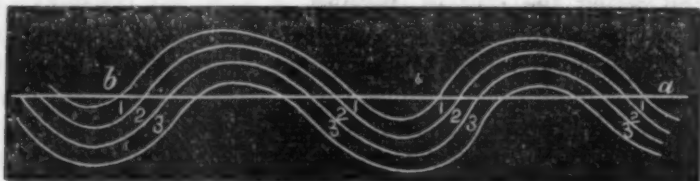
The remarkable position of many of the stratified rocks, seems to require us to entertain this opinion. Their regularity has been more or less disturbed, and sometimes completely destroyed, at least to the eye of the unskilled observer. Sometimes the strata are inclined, and in different regions, at very different angles. Sometimes they are nearly vertical. We have seen huge masses of stratified rocks presenting every appearance of having been bent, by some tremendous blow, like the concussion of two planets, nearly at right angles, and the solid rock broken by the violence to which it was subjected. In other cases, the strata have yielded to the force exerted upon it, and bent as if they were elastic. The thickness of some of these *bent* strata is also worthy of special note, and shows the immensity of the force exerted upon them. In Scotland, certain strata which are found bent with considerable regularity for some twenty miles in breadth, are nearly two thousand feet in thickness.

The more general appearance of these rocks is such as might be witnessed were powerful pressure applied to their extremities. For example: lay cloths of various colors over each other, upon a table, and then cause their extreme edges to approach each other. They will form waving lines, of more or less regularity, resembling the curves in figure 1. If this *disturbance* is continued to a given extent, the horizontal layers will assume a vertical position, like an inverted ox-bow, or like a manuscript *v* inverted. Under certain circumstances, the layers will be quite vertical and in close contact throughout. Such facts prove that the land, rather than the sea, has been subjected to various disturbing forces, which have produced great changes in its condition.

Such changes in the condition of stratified rocks necessarily occasion great uncertainty as to the value of what seems to offer great facilities for mining operations.

But these are not the only cause of doubt and difficulty to the practical miner. Suppose, again, that the upper portion of these strata are exposed to violence a sufficient length of time to be worn away, as if those portions of the

No. 1.



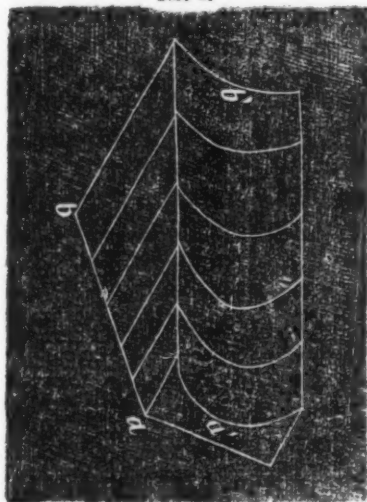
curved strata in figure 1, above the line *a b*, had disappeared, what phenomena would then present themselves? Plainly these: The various strata, numbered 1, 2, 3, would appear at four different places on the surface, so that, to an unskilled eye, it would seem that there were distinct independent strata at each of these four points, while in fact there is but one of each, though that one is exposed, or *crops out*, in different positions, four times.

But we have only begun to expose the difficulties the miner must encounter from this or similar disturbances. Instead of being *denuded*, or worn down to a horizontal surface, as shown by the line *a b*, in figure 1, suppose a deep channel should be worn into these rocks. Then, standing in this channel, it is obvious we should see the several strata, one above the other, and, for aught that could be seen, we might suppose they extended in

a horizontal direction; and if we should make an attempt to trace a given stratum for a considerable distance parallel to the surface, we should soon discover our error, and be obliged to change entirely our mode of operations.

Or suppose the strata are found to *dip* considerably; that is, that they extend in an oblique direction, with reference to a plain surface, and that a channel or valley is scooped out in a direction *contrary to the dip of the*

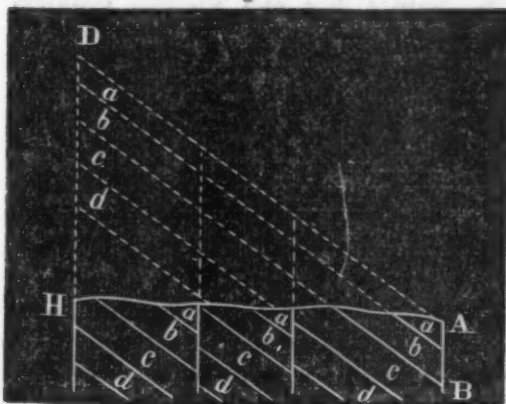
No. 2.



strata, as in figure 2. Here *b* is the lowest stratum or rock, and *a* the highest; that is, they were such before they were tilted from a horizontal position; and they still are such, since the others must be removed ere any given part of the *flat surface* of *b* can be exposed to view. But in the channel, in figure 2, the lowest stratum *b* is seen at the highest point *b'*, while *a*, the highest stratum, is seen at the lowest point *a'*. In other words, the order of the series, under such circumstances, appears reversed. For it must be borne in mind that the rocks are in fact visible only within this channel, their other parts being covered with earth, or otherwise hidden from view, or only a single stratum perhaps is visible.

We present but one other difficulty which the practical miner must encounter, and for which he ought to be prepared, and that is, the occurrence of **FAULTS**. While the *dip* of the strata may be uniform, and the relative position of the several rocks be well understood, through their entire extent, a given stratum may crop out in various places, and lead the observer to suppose that there are several strata of the same rock. Figure 3 will illustrate this. If *A H* represent the surface of the earth, where the strata *a b c* crop out at several

Fig. 3.



places, an observer might suppose that each of these was a continuous stratum, and prepare his machinery to dig out the coal or the iron at one or all of these points, when by advancing a few feet only, he would come to a complete termination of the material sought for.

Originally these rocks formed one regular and uniformly inclined series of strata, as indicated by the dotted lines. But by successive,

or at least by several distinct *depressions* of its different parts, an equal number of faults have been produced, as denoted by the perpendicular lines; and, instead of several extensive strata of coal or iron, etc., each of which might have been thought valuable property, the disappointed owner does not possess even one that will pay him for the outlay necessary to commence his mining operations.

The various phases presented by *denudation*, in these and other cases which we can not well illustrate by any means within our reach, are of very great

importance to the practical miner. The value of a vein of metal, or of coal, is a question which science alone, without actual experience, can determine; and yet this is the question which is first in order, as well as first in importance, and he who essentially errs in its decision, may either waste a fortune in the fruitless endeavor to increase it, or he may have a fortune just beyond his fingers' ends, which remains of no practical value, because that value is not understood.

But there is another view in which this matter of denudation assumes gigantic proportions. We refer to its bearing upon the question of the earth's antiquity. It is obvious that the process which produced such changes, must have been carried on, however slow its action may have been, to an amount equal to all the alluvial and diluvial formations now existing. The unstratified rocks must have furnished the material for all the formations that have been poured over them. No new creation of matter for such purposes can be supposed, and hence it must be taken for granted that the unstratified rocks furnished primarily the material of all stratified rocks.

That this was a gradual process, and not the result of some sudden overflow, from volcanic eruptions or the like, is evident from the nature and condition of the new formations. These are not chiefly angular and fragmentary bodies, thrown promiscuously into heaps, but rather disintegrated particles, fine sands, rounded pebbles, and the like; and they often form thin and regular beds, as if the work of a skillful craftsman. Hence we infer that these changes were the result of that gradual process called denudation. But the results achieved are mighty in extent. There are regions of country, as in Rosshire, in Scotland, for example, where this process of denudation has removed a body of sand-stone, many miles in extent, and of a depth varying from one thousand to three thousand feet in thickness. Those widely-separated mountains bear striking evidence that they are but detached masses, from which the material formerly uniting them from base to summit, has been removed. According to Prof. Ramsey, in his *Survey of Great Britain*, there must have been removed from around the summit of the Mendips, a mass nearly a mile in thickness; and in South Wales and adjacent counties, strata not less than 11,000 feet in depth must have been thus carried away. Nor will such statements tax our credulity, when we call to mind the immense extent of territory formed by these means, on continents and islands, and in filling up the mouths of rivers and bays. Indeed, whole countries, almost, have been thus rescued from the sea.

Nor could changes of this sort have been the result of some single sudden revulsion, for another reason. Living animals were buried in the soft, and probably liquid mass, which, in the lapse of time, became hardened, so as to be unaffected by a subsequent overflow, in which other animals, of a totally diverse character, and indicating an almost entire change of circumstances, became again part and parcel of solid rock above them.

There are localities which furnish evidence of as many as ten or a dozen distinct disruptions and new formations. The mass once liquid became solid, and then disruption followed. After which the crevices thus formed were filled with matter which in its turn became solid rock, which rock, thus formed, was again subjected to sufficient violence to cause its rupture, and its fissures were again filled with matter, which passed through the same process of hardening and disruption, and so on.

The number of these formations, and the length of time required for each, indicate a period of inconceivable length, and all attempts to establish the date of the actual creation of the earth, as described in the opening of Revelation, is shown to be utterly impossible.

THE CENTRE OF POPULATION, AND OF COMMERCE, AND LOCOMOTION.

WHAT really are the sources of commerce, and where commerce must ultimately tend, seems to be little understood by many persons. We hear much of the immense commerce of New-York ; that the revenue is collected there ; that the public money must be expended there, because it is collected there ; and various assertions and opinions of this sort, based upon the idea that an importing city is the centre or source of commerce. Nothing is, in fact, more absurd than such an idea. New-York, like all importing cities, is merely an agent for the transfer of fabrics, money, and persons, to the place of their ultimate destination, and makes its living and its wealth by its receipts for this agency, like a commission merchant. The importer of silk goods, for example, adds his commission on the price, for his services and capital in transferring them from France to Ohio. The broker adds his commission on the money, which he transfers from the capitalist to the borrower. All this makes a commercial city, but does not make commerce, and is not its end, any more than a farmer's wagon makes the hay and wheat carried on it. The sources of commerce are in a people and soil able to produce, and a people and wealth able to consume. It is the producer who furnishes the articles for the commercial agency to transfer, and it is the consumer who takes them from him. New-York collects revenue, but who pays it ? Ohio pays one tenth the revenue of the United States. The government informs us it has collected fifty millions of revenue. Then Ohio has paid five millions of it ; Indiana and Kentucky have paid five millions more.

The sources of commerce are production and consumption. Now let us see where production and consumption are. If the wealth of a country were very unequally distributed, they might be one-sided, especially if some portions of the country were barren. But in the United States, the advantages of the country and the wealth of the country are very equally distributed. The older States have the largest share of manufactories, but the new ones in soil, and all natural productions. Ohio is probably as wealthy, in proportion to its inhabitants, as any State, except, perhaps, Massachusetts or New-York. In this nearly equal distribution of advantages, the centre of production and consumption is practically not far from the centre of population. Where is the centre of population, and what has been its progress ? Without calculating it to a single mile, we may state that in 1790 the centre of population was in Adams county, Pennsylvania ; and in 1850, it was in Belmont county, Ohio. Thus, between 1790 and 1850, (sixty years,) the centre of population has travelled two hundred and twenty miles almost due west. The centre of population travels about 37 miles decennially, or nearly four miles per annum. In half a century it will be in Indiana ; and it will be a century at least (if ever) before it crosses the Mississippi. Probably, if the Union continues as it is, it will never cross the Mississippi. The reason is obvious. Between the California mountains and the west line to Missouri, there is but a small portion of fertile lands ; while east of the Mississippi, and west of the Alleghenies, every acre may be made a garden spot. West of the Mississippi to the Pacific, is a greater distance than from the Atlantic to the Mississippi, but far less fertile and productive.

The centre of population is in Ohio, and it is evident from the preceding facts that it will be so for half a century. Here in Ohio, then, is the centre of commerce ; and it is this fact which so rapidly creates its wealth, develops

its industry, and gives such activity to locomotion; and this activity, industry, and development, is not likely to be at all diminished; on the contrary, it will increase. The commercial growth of its chief ports have never been equalled by the growth of any part of the world. Cincinnati, Cleveland, Sandusky, and Toledo are all growing rapidly; and to these we should add the interior towns of Dayton, Columbus, and Zanesville, more immediately dependent on manufacture, but connected with the others by railway. To illustrate the growth of commerce in Ohio, we will give the aggregate population and growth of these towns; for it is well known that the commerce of these places has increased more rapidly than the population, so that in giving the growth of the towns, we really represent the growth of commerce.

The aggregate population of Cincinnati, Cleveland, Sandusky, Toledo, Dayton, Columbus, and Zanesville, at different periods, were as follows:

| | | | | | | | | | | | |
|----------|---|---|---|---|---|---|---|---|---|---|---------------|
| In 1820 | - | - | - | - | - | - | - | - | - | - | 13,141 |
| In 1830, | - | - | - | - | - | - | - | - | - | - | 32,722 |
| In 1840, | - | - | - | - | - | - | - | - | - | - | 72,512 |
| In 1850, | - | - | - | - | - | - | - | - | - | - | 180,351 |
| In 1853, | - | - | - | - | - | - | - | - | - | - | about 247,512 |

Here is a steady increase of 140 per cent decennially, or 14 per cent per annum. The population of these towns in 1860 will, in all human probability, exceed half a million of people. Cleveland will then have its 60,000, Toledo its 40,000, and other towns in proportion.

This growth of towns is not so much the growth of general population as it is of surplus production and of commerce. The following sums are something like the aggregate commercial value which passed through these places in 1852:

| | | | | | | | | | | |
|-------------|---|---|---|---|---|---|---|---|---|---------------|
| Cincinnati, | - | - | - | - | - | - | - | - | - | \$110,000,000 |
| Cleveland, | - | - | - | - | - | - | - | - | - | 30,000,000 |
| Sandusky, | - | - | - | - | - | - | - | - | - | 59,600,000 |
| Toledo, | - | - | - | - | - | - | - | - | - | 57,300,000 |
| Dayton, | - | - | - | - | - | - | - | - | - | 5,000,000 |
| Columbus, | - | - | - | - | - | - | - | - | - | 5,000,000 |
| Zanesville, | - | - | - | - | - | - | - | - | - | 3,000,000 |
| Aggregate | - | - | - | - | - | - | - | - | - | \$269,000,000 |

The values at Toledo and Sandusky are said to be accurately ascertained; that of Cincinnati is very nearly correct. The others are estimates. The value of flour, wheat, corn, and hog products exported from Toledo were equal to eight millions of dollars. The value of the same articles exported from Sandusky and Cleveland was probably equal to that at each place. The value of the same articles, with whiskey, candles, and soap, exported from Cincinnati, was equal to thirteen millions. The value of wool, cheese, and butter exported from the State is equal to four millions of dollars. Thus we have in the exports of half a dozen agricultural articles, fifty-one millions of dollars. When we consider an hundred other articles of domestic export, the vast consumption of these, or four millions of people for whom we import, and the already great extent of the manufactures of Cincinnati, Dayton, Zanesville, Columbus, Pomeroy, and other places—the vast amount of iron, coal, stone, and other heavy articles carried on river, canal, and railroad, it is not difficult to comprehend that the internal commerce of Ohio already amounts to three hundred millions of dollars. When

we add to this the commerce of Indiana, of Kentucky, Tennessee, and Illinois, lying in the Ohio Valley, we see that the boasted commerce of the Atlantic cities becomes altogether an inferior thing. Important and highly useful and profitable as foreign commerce is, we should never overrate its value. It is the internal commerce of a country like this, which spreads from sea to sea, and almost from pole to pole, which gives profit to enterprise and value to improvement.

This westward march of population, and the growth of commerce, carries with it the centralization of locomotion. Already we see the comparatively small town of Indianapolis become the greatest crossing-place of railways. Already we see twenty railroads made, or making, into Cincinnati. Already we realize the geographical certainty, that through here must flow all the great channels of commerce which will intersect and irrigate the valley of the Ohio. Here North and South, East and West, must shake hands, and if not friends, we will make them so. We will show them the great inheritance of freedom, as it spreads out in beauty and glory over the continent. We will show them the silver Ohio, winding its way through the garden of America, and bringing greater wealth than golden sands into the lap of its happy people.

Centuries will pass away before the centre of population, of commerce, of wealth, and glory and grandeur shall pass from this valley. Happy will it be, if contented to dwell amidst peace and plenty, and casting away the avarice and the passions which make men the slaves of Mammon, or of Moloch, they live in harmony with God and man. Thrice happy will they be, if, unlike the Hebrews, they shall realize that this is the promised land, and obey the God who brought them there. Fair is the inheritance, hopeful the prospect, inspiring the progress, and beautiful that law of freedom, which gives us security, order, and liberty.—*R. R. Record.*

RAILROAD TO THE PACIFIC.

WE have received a long and elaborate report, approving of the "Northern Route," by Edwin H. Johnston, C. E., 2d edition. We are happy to avail ourselves of the opportunity to add our mite in behalf of this great national work. We can scarcely conceive of any thing which can have so immediate and so vast an influence in favor of the commercial enterprise of this country. Not a State, and not a county, but would realize substantial benefit from it. It opens a direct communication with China and Japan, and the countries adjacent. An immense trade is carried on from this region with the whole world.

Chicago is assumed as the starting-point for several routes, being nearly in a direct line from the Eastern cities, and connected with them already by several railroads and by the lakes, and which need not here be described. There is also easy communication from Chicago to the cities of the South. The Western terminus of the road is not so easily selected. One plan proposes to adopt the Straits of de Fuca, at the southern extremity of Vancouver's Island. This point is 1752 miles, air line, from Chicago. But the geological features of the country demand that the track should deviate essentially from a straight line, and pass round the great bend of the Missouri River, thereby avoiding the great elevation of the Black Mountains, and the crossings of the Mississippi, Missouri, and Yellow Stone rivers, where they are

navigated by large boats. By this route, a convenient opportunity is afforded for a branch-road with the west end of Lake Superior, a matter of no small account.

From the great bend of the Missouri, the route proposed extends along the northern side of that river, to one of the passes between its sources and the sources of the Flat-head, or Clark's branch of the Columbia River. It then follows down that and the Columbia River, to a point in the vicinity of Fort Okanagan. The Rocky Mountains are not an unbroken range, but rather a series of groups, like the White-hills and the Adirondacks. At different places there are very marked depressions in the elevation of this range. The point already named is one of these.

The length of this route is estimated thus: In Illinois, 70 miles; Wisconsin, 290 miles; Minnesota, 620; Missouri, (N. W.) Territory, 420; Washington, 560. Total 1960. Of these, 990 are embraced in existing acts of incorporation. The portion in Illinois is already under contract, and 40 miles of it are graded, and the road will be completed to the Wisconsin line the coming season. In Wisconsin, 55 miles are located and under contract, and the grading is in progress. This portion extends to Madison, the capital of the State, and will be completed in a few weeks. The same company are authorized to build a road from Janesville to Lake Superior, and this branch is also under contract to Fond du Lac, and is partly built, 86 miles from Janesville; 40 miles are graded. No locations have been made, for any considerable distance, beyond the Wisconsin River, though several routes have been examined and reported upon favorably.

The Straits of de Fuca are 96 miles in length and 11 miles broad. They connect with Hood's Canal, Puget's Sound, Admiral Inlet, and the archipelago of Arro. The country around is desirable in all respects, and is well supplied with water, with many fine harbors and bays. Bituminous coal is abundant, and the quantity of good timber is "inexhaustible." As an agricultural country, it is said to be remarkably productive.

Another point selected for the Pacific terminus is Astoria, at the mouth of the Columbia. This, it is said, will lengthen the line of the road about 150 miles, but the Cascade Mountains would thereby be avoided; and if no convenient pass can be found at those mountains, the mouth of the Columbia may be found the most desirable terminus.

San Francisco is also suggested for the Western terminus; but the valley of the Sacramento and its tributaries, where the population is now chiefly collected, could not, it is said, be conveniently connected with that city by railroads.

In making the round trip to Shanghai or Jeddo, or to any port in China or Japan, vessels from San Francisco must traverse nearly 1000 miles further than from the Straits of de Fuca, while the route to China from these straits passes near the Alentan or Fox Islands, the Kurile Islands, and the Japan Islands, which form a chain nearly two thirds the whole distance to China, and affording convenient opportunity for repairs, fuel, water, etc., beside making valuable contributions to the trade of the Pacific.

The point of divergence from the Northern route above described, if the mouth of the Columbia be selected for the Pacific terminus, is in the Clark's River Valley, where that river emerges from the hill-country, thence across the elevated prairie-plain, southerly, near to the junction of Lewis's River with the Columbia, and thence along that river to its mouth.

Mr. Whitney's plan proposes a line from *Prairie du Chien*, on the Mississippi, in Wisconsin, to the valley of White River, or White Earth River, west

of the Missouri; thence to the valley of Salmon river, and along that and Lewis River, and the Columbia, and afterward bearing northerly to Puget's Sound.

A route still more Southern, follows the valley of the Platte River, thence through the South Pass across the head-waters of the Colorado, and the tributaries of Great Salt Lake, thence into the valley of Lewis River and the Columbia to the Pacific.

Still other routes have been proposed, but they are probably much more expensive than those before mentioned.

Walker's Pass, situated $35^{\circ} 17'$ N. lat. and $118^{\circ} 36'$ W. long., is probably about 5000 feet above the sea. But this is, perhaps, the best passage across the Rocky Mountains *proper*. It is only 70 miles, in a direct line, from the Pacific. From this, three routes have been proposed to the valley of the Mississippi. One runs from Walker's Pass, north-easterly, to the Vegas de Santa Clara, or the Rio Virgen; thence to the Colorado, and its Grand River branch, to the Coshotope Pass, in the mountain range, between the Colorado and the Del Norte, to a point near Fort Massachusetts, in the valley of the Del Norte; thence by Bent's Fort, on the Arkansas River, to the Smoky Hill Fork, of the Kansas, and along that river, across the State of Missouri to St. Louis, making a total of about 2130 miles.

Still another route leads from Walker's Pass, or from the Tejon Pass, which at the junction of the Sierra Nevada with the coast range, and is further south than Walker's Pass, and about 60 miles distant from it, and thence across the valley of the Colorado, near the 35th parallel of latitude, to that of the Del Norte, crossing the latter a little south of Santa Fé, near the Albuquerque, thence to the valley of the Canadian River, and terminating on the Mississippi, near the mouth of the Ohio. This is substantially the route proposed by Mr. Gwin, in the United States Senate, in the last session. By this route the distance from San Francisco to St. Louis is about 2140 miles.

The last route we shall describe proposes a direction as follows: From Walker's or the Tejon Pass, to the mouth of the Gila, on the Colorado, 50 or 60 miles from the mouth of the latter; thence along the valley of the Gila, and thence across the elevated plateau to the valley of the Del Norte, down the latter to El Paso, and thence through the northern part of Texas to the Mississippi. This distance probably exceeds 2200 miles.

CHARLESTON, LOUISVILLE, AND CINCINNATI.

WE make the following abstract from one of our Western exchanges:

The connection of these three flourishing cities by a direct railroad communication, which has been in contemplation for so many years, it is said will in a short time be consummated. The whole of the line from Knoxville south, is under contract, and a large force is now engaged in grading the road. A corps of engineers will commence the location of that portion of the southern part of the road in Tennessee, and the work will be earnestly commenced this summer, and diligently prosecuted to completion.

The late Legislature of Kentucky, which has just adjourned, granted a charter, with liberal provisions, for a railroad through that State from Louisville and Cincinnati, to connect with the Knoxville and Kentucky road at

the Tennessee and Kentucky line. For that portion of the road which is in Tennessee, sixty-five miles, more than half the amount that is necessary to complete it is already provided.

Cincinnati has always taken a lively interest in this enterprise. In fact, if we mistake not, the project of uniting the southern Atlantic seaboard at Charleston, and the Ohio River at Cincinnati, by a railroad, originated with the citizens of the latter city. The management of this grand enterprise is in the hands of gentlemen of such intelligence, enterprise, and credit in the city, as leaves no doubt of its speedy and successful accomplishment. They see clearly the great advantages and benefits their city is to derive from this connection. It will open out to her manufacturers the richest portion of the wealthy South. They will have complete possession of Western Virginia, East Tennessee, South Carolina, Georgia, Alabama, and Florida, where scarcely an article from their workshops is at this time to be found. It will make Cincinnati the great heart of the great West. Her streets will be thronged by men from the East, the West, the North, and the South.

Charleston has cotton and rice, and is the *entrepot* for the products of the West Indies and South America. She needs the flour, bacon, corn, and other necessaries of life, which this road will give her. East Tennessee alone, in the course of two or three years, by the time this road is completed, will send her five hundred thousand barrels of flour; and whenever an exigency may demand it, she may draw any supply she will want from Kentucky and Ohio. It is more than probable that Europe, as well as the West Indies and South America, will hereafter look to the United States annually for a large proportion of their breadstuffs. When this railroad connection is formed, Charleston will be able to make up an assorted cargo for any part of the world. Now she labors under the great disadvantage of being only able to export the two articles of cotton and rice. With this railroad, she may yet rival Richmond and Baltimore in flour and tobacco, and other northern cities in the sale of mess-beef and pork. She will be directly connected with a country celebrated for its stock of all kinds, and its immense agricultural resources.

But beside the exchange of the commodities of different sections of the country, which will be produced by this railroad connection at its extreme, the development of the resources along the middle of the line, is a subject of equal if not still greater consideration. The mineral wealth of the range of the Cumberland Mountains, between Tennessee and Kentucky, is unsurpassed. Coal and iron of the very finest quality are found in these mountains in inexhaustible quantities, and in close proximity. Both these minerals have been tested by our manufacturers in this city and elsewhere, and pronounced to be of the best quality. Coal could be delivered from these mountains at Louisville, Cincinnati, and Knoxville, at from six to ten cents per bushel. An abundant supply could always be had at any season of the year. The beneficial effects of tapping these mountains by a railroad, will not only be felt by these cities, but a dense population would fill up the valleys of these mountains, and people what is now a comparative wilderness. Towns and villages would spring up along the line of the road, and the busy hum of industry awaken echoes from the solitude of the mountains and the hills.

IMPORTANT RAILWAY ENTERPRISE.

THE completion of the central link in the great chain of railway communication connecting the Atlantic cities with the Mississippi, was justly regarded as the commencement of an important era in the history of railway enterprise; and although an almost unbroken line of communication has thus been formed, much yet remains to be done to afford the increasing population of the Western States such facilities as their growing wealth and intelligence entitle them to. The cities of Boston and New-York have been placed within about thirty-six hours' distance of Chicago and Milwaukee. From the former city, the most populous, although perhaps not the most important, in the West, a continuous line of railway extends to the Mississippi, which, connected with the Michigan Central, Great Western, and New-York Central Railways, brings New-York within forty-eight hours of St. Louis. Milwaukee, less fortunate than its rival, is deprived of a direct communication with the Eastern States, and is at present compelled to pay tribute to Chicago, the great bulk of the travel and traffic of the State of Wisconsin, as well as that of Iowa and the neighboring territories of Missouri and Minnesota, finding the route via Chicago and the shore of Lake Erie the only outlet to the East. Situated as Milwaukee is, on the opposite side of Lake Michigan, her people are compelled to travel at least 150 miles further than they ought, in order to reach New-York or Boston. To remedy this, and render Milwaukee independent of her powerful rival, a line of railway is being constructed from Detroit to Grand Haven, on Lake Michigan, opposite Milwaukee. This road is called the Oakland and Ottawa. From Milwaukee to Madison, the capital of the State, a distance of 100 miles, a road is in full operation. From Madison it is now proposed to run a line to Prairie du Chien, on the Mississippi River, which is about 100 miles from Madison. Of this remaining portion of what is called the Milwaukee and Mississippi Railroad, twenty-five miles more will complete the road to the Wisconsin River, which is navigable to Prairie du Chien. This portion of the road is under contract, and is being pushed vigorously forward. The great object, however, is to carry the road through to the Mississippi, and this the capitalists of Milwaukee are confident of accomplishing.

It may be said that such a scheme can be of no interest to Canada, but we regard it as one of the greatest importance. The travel and traffic from Wisconsin over the Great Western Railway is already great; but the choice of route is not taken on account of any saving in distance; for, once at Chicago, the travel is more likely to find its way down the south shore of Lake Erie than via Detroit. In order to secure the immense trade of the West, it has been deemed advisable to construct the Oakland and Ottawa road, in which the Great Western and Michigan Central companies are, we believe, a good deal interested. This connection being formed, it is desirable that some means should be devised to form outlets for the territories of Missouri and Minnesota, which are now being so rapidly populated. These objects being secured, there is still another, and by far the most important, to be considered. It is settled beyond a doubt that a continuous line of railway from the Atlantic to the Pacific must be built, the United States government having now taken the matter in hand. Public opinion in the United States is divided on the question of what route it shall take; but there can be no doubt that the most direct and cheapest route will ultimately be decided on. Such

being the case, then, on referring to Mr. Johnson's map of the Northern route of the proposed Atlantic and Pacific Railroad, it will be found that the most direct route to the Pacific is from the point on the Mississippi at which the Milwaukee and Mississippi road will terminate. With a continuous line of railway, such as the one projected will form, the benefits to be derived, both by Canada and our neighbors to the East and West, will be immense. The roads forming the connection between the Atlantic and the Mississippi will form the most important chain of railway communication on the American continent, while it will traverse the most populous and wealthy portion of it.—*Hamilton Spectator*.

OHIO AND CINCINNATI.

THE first permanent settlement was made in Ohio, by the New-England Ohio Company, in 1788, at Marietta, at the mouth of the Muskingum. Gen. Arthur St. Clair was appointed Governor of the Territory. The second was made at Columbia, five miles above Cincinnati, in October, 1788. The first cabin built on the soil now covered by the city of Cincinnati, was erected in December, 1788, on what is now Front street, a little east of Main street. That region was then covered by dense forests. The settlement was first called Losantiville. Other points were soon occupied, namely, Manchester, in 1790; Gallipolis, 1788; Hamilton, 1794; Dayton, 1795; Chillicothe, 1796, etc.

Soon after the commencement of these settlements, the Indians became very troublesome, wars were undertaken, with various success, and it was not till 1794 that the Indians were so reduced, and the strength of the Americans appeared so formidable, that they were induced to sue for peace. In 1798, the number of inhabitants was 5000, in eight organized counties. The first meeting of the Territorial Legislature was in September, 1799, and William Henry Harrison, since President, was then elected a delegate to the American Congress. In 1802, a State constitution was established, and Cincinnati was incorporated as a town. It had about 1000 inhabitants. That portion of the State which lies west of the Cuyahoga river, was acquired, by treaty with the Indians, and afterward the Maumee and Sandusky regions. In 1811, the Indians were defeated in the great battle of Tippecanoe, by Gen. Harrison; and in 1816, the seat of government was removed from Chillicothe to Columbus, its present capital, on the Scioto river. The population of the State, in 1850, was 1,980,408.

The limestone portion of the State, which comprises nearly the western half of it, is admirably adapted to wheat and grass. This section commences at the lake, near the mouth of Huron river, and running in a southerly direction, touches the Ohio river in Adams county. The counties forming the Connecticut Reserve, which is a slate and sandstone formation, are less productive, but need only careful cultivation to secure good crops of grain and fruit. The middle and south-eastern section of Ohio, is more uneven, its soil is excellent, and its fertility almost inexhaustible. The State embraces an area of 25,000,000 acres, almost the whole of which might be put under cultivation, and is competent to support more than 10,000,000 of inhabitants. Her capacities of production are immense—far more than has yet been called into action, although in her race of improvement she has made rapid and healthful progress.

The lakes and the Ohio river furnish ready communication with an immense territory, while railroads and canals have been made to multiply these facilities to a very great extent. The Ohio canal, begun in 1825 and finished in 1832, extends 300 miles; its width is 40 feet and depth 4 feet. Its branches are the Columbus feeder, 9 miles long; the Hocking canal, 56 miles; the Muskingum "improvement," 91 miles; the Washonding canal, 25 miles; the Canton side-cut, 19, and the Mahoning, 87 miles. The last named is connected with direct and continuous routes to Philadelphia. The Wabash and Erie canal, in Ohio, with its side-cuts, is 91 miles long. The Miami canal is 170, and has navigable feeders, increasing the total length to 321 miles, and terminates at the western extremity of Lake Erie. The sum total of canals in Ohio is 920 miles.

She also has 46 railroads, either constructed or in progress. The number of miles in operation in January last, was 2867, and miles in course of construction, 1578, at a total cost of \$44,927,058.

The geological formation of Ohio is comparatively simple. Five distinct rocks occur, namely, blue limestone, estimated to be 700 to 1200 feet thick; black shale, 250 feet thick; fine sandstone, 350 feet; conglomerate, 200 feet; and coal-beds 2000 feet in thickness. All these occur in some counties, only a part of them in others. The coal region is on the west bank of the Ohio, and occupies about one fourth part of the State. Iron ore also occurs, in large quantities, some 1200 square miles, as it has been estimated, being underlaid with it.

MANUFACTURES.—These are chiefly confined to the production of raw material, as leather, sugar, wax, potash, etc., beside those described elsewhere. Vast quantities of beef and pork are annually sent to Eastern cities for exportation.

MINERAL RESOURCES.—Prof. Mather says, in his report, that the single county of Tuscarawas contains eighty thousand millions of bushels! The county of Muskingum can furnish ten thousand millions of bushels; Meigs, Athens, and Summit contain much more. Coal occurs in twenty counties. In 1848, 6,538,968 bushels were mined within their limits. By 1860, from present appearances, the annual product will probably reach 20,000,000 bushels.

BUTTER TRADE.—Cincinnati has become the great distributing point for butter and cheese for the South and South-West. During the year ending Sept. 1, 1852, the imports of butter were 3,412,600 lbs., and the exports 3,321,250 lbs. These two quantities differing only about one million of pounds, it follows that a quantity nearly equal to that actually consumed by the inhabitants, must be received from private conveyances, and this is computed to be about 4,000,000 lbs. annually. On this supposition, 3,000,000 lbs. being received by private conveyances, the whole quantity actually supplied annually, from all sources, must be six and a half millions of pounds.

TOBACCO.—Formerly this was but one branch of the business of grocers, but within a few years it has assumed a new importance, and large commission houses have been established, devoted exclusively to this product, and it is now through these agencies that the wholesale dealers are chiefly supplied. A city inspection has been established, and a tobacco warehouse, on an extensive scale, is already erected. This city is the centre of a great tobacco region, and is its most convenient market.

CANDLES.—This business has been greatly increased within a few years, and has now acquired no little importance. In 1846-7, the exports were

16,622 boxes. In 1851-2, they were 121,727 boxes, and this perhaps is scarcely a moiety of the entire manufacture.

WHISKEY.—This article was manufactured in and around the city, in 1852, to an extent of more than 4000 barrels, beside what was consumed by its inhabitants. We hope this product is not destined to increase.

By the census of 1850, the annual products of Ohio, in the several articles named, are as follows :

| | | | | |
|-------------------------|---|---|---|-------------|
| Pig-iron, entire value, | - | - | - | \$1,255,850 |
| Castings, | - | - | - | 3,069,350 |
| Wrought-iron, | - | - | - | 1,076,192 |
| Woollen goods, | - | - | - | 1,111,027 |
| Cotton | - | - | - | 39,4700 |

The agricultural statistics are as follows :

| | | | | |
|------------------------------------|---|---|---|--------------|
| Acres of improved land, | - | - | - | 9,730,650 |
| Value of farming implements, etc., | - | - | - | \$12,716,153 |
| “ live stock, | - | - | - | 43,276,187 |
| Wheat, bushels, | - | - | - | 14,967,056 |
| Indian Corn, “ | - | - | - | 59,788 750 |
| Flaxseed, “ | - | - | - | 185,598 |
| Wool, lbs. | - | - | - | 10,089,607 |
| Butter, “ | - | - | - | 34,180,458 |
| Cheese, “ | - | - | - | 21,350,478 |
| Maple Sugar, lbs. | - | - | - | 4,521,643 |
| Wine, gallons, | - | - | - | 44,834 |
| Hay, tons, | - | - | - | 1,360,636 |
| Dew-rotted Hemp, tons, | - | - | - | 628 |
| Water “ “ “ | - | - | - | 464 |
| Value of home-made manufactures, | - | - | - | \$1,696,601 |

The steamboats and barges constructed and registered during the year 1853, were 10,252 tons, custom-house measurement.

COMMERCE.—In 1852, 267 steamboats arrived at the wharf, the registered tonnage of which was 60,543 tons, and their capacity about 120,000 tons. The total number of arrivals was about 3675, or more than 10 daily, and from the following places: New-Orleans, 219; Pittsburgh, 574; St. Louis, 218; other ports, 2654. The total arrivals in 1853 were 3630.

The value of the total imports into Cincinnati during the year ending August 31, 1852, was \$41,256,199, and for year ending 1853, was \$51,230,744. The exports for these two periods were, severally, \$33,234,896, and \$36,266,108.

AGRICULTURE OF THE SANDWICH ISLANDS.

WHILE these Islands are being rapidly depopulated of their native inhabitants, the foreigners are rapidly developing their agricultural resources.

By the Report of 1853 of the Royal Hawaiian Society, it appears that sugar is one of the staple productions. The cane, although a native of that island, does not grow so well as in the East Indies. The product of sugar for the year 1853 was estimated at 700 tons, which, with the molasses, was valued at \$100,000. This is far below the capability of these sugar-fields, as hundreds of them are lying idle for want of money and enterprise.

Coffee grows well there.

Wheat, until recently, has been little grown. Now they are erecting mills, and it is thought this grain may succeed well. Indian corn has not succeeded well. Potatoes grow abundantly. The production of sweet potatoes is astonishing. They grow well upon all the islands, and upon hills of broken lava, where there is not a particle of earth to be seen. The sweet potatoe is the great article of food in the dry, burnt districts of Hawaii. The amount of labor required to raise a crop is very small, even where a pretense is made at cultivation, and the yield is from fifty to seventy-five barrels per acre; but the quality is inferior to those grown in Bermuda or the southern United States.

Apples, pears, plums, quinces, and cherries have not succeeded well. They find the same difficulty there that is met with in several of our most southern States. The scale insect affects the trees, and the extreme heat of summer dries them up so that the fruit fails to come to perfection. But they have figs, grapes, bananas, oranges, etc., and no doubt will be able to grow peaches to great perfection. Mr. Parker, of Hamahua, and Mr. Green, of Makawao, have fine trees bearing fruit equal to New-Jersey or Delaware peaches.

TOBACCO.—Some attempts have been made to grow tobacco from Cuba seed, which promises fair success.

NEAT CATTLE.—It is stated that this branch of farm business may be made very profitable in all the Sandwich Islands. Cattle require no shelter, no labor to provide winter food, no salting, and very little care. Horned cattle are worth an average of \$5 a head at Oahu, and upon some of the islands not more than half that sum. Most of the cattle imported have come from Australia. Messrs. Hopkins and Moffit have introduced the Hereford and Angus breeds, which have proved profitable. Efforts are now making to import Devon cattle from the United States, though the expense is very great and the risk considerable. It is even talked of that butter and cheese can be exported profitably from the islands. A Mr. Parker, of Hawaii, has a herd of 140 cows, and although he gets a very small yield of milk and butter, he sells it for fifty cents a pound, and receives \$2340 a year for his sales, and fats a large number of swine with the milk.

SHEEP.—Several persons upon Hawaii and Oahu have engaged extensively in sheep-raising, and have flocks of 1000 to 3000, though but little value is placed upon the fleece—the meat and fat being the great object. Consequently but little attention has been paid to breeds. Generally, the stock are derived from the Merino and Saxon, principally from Australia. We notice a late importation of South Downs from the flocks of Mr. McIntyre, of Albany, and L. G. Morris, of Mt. Fordham. The ewes produce lambs at a year old, and two a year afterward. The greatest difficulty there in the way of sheep-raising is the same that afflicts all parts of the United States—the packs of worthless dogs, the most worthless of all animals except their owners. The only way to rid any district of these thieving curs is to administer a grain of strychnine, disguised in a piece of meat, to each cur.

SWINE.—Whoever knows any thing of the importations at San Francisco for a few years past, must have come to the conclusion that pigs are among the spontaneous products of the Sandwich Islands. Very large numbers have been taken from the islands to California and Oregon, until the price has risen from almost nothing to equal the price in this city—say four to six cents a pound. Every native can raise swine there as well as in this country, and with some they constitute their entire possessions. Several importations

have been lately made with a view to improve the breeds. The Agricultural Society have obtained some of the Suffolk and Mackay breeds from Boston. Capt. John Meek has imported a number of valuable swine of English and American varieties, and the royal family have the pure Chinese breed.

HORSES.—A very marked improvement has been made in this branch of business by recent importations. Some of the improved colts have sold for \$300 each. It is calculated that the expense of freight, etc., upon one horse from here to Honolulu would be \$200, beside the risk; and this deters parties from getting some of our improved breeds of horses out there, though we have no doubt they would do well, as the wild animals on the islands when run down and caught with the lasso, and broken in or broken down by a rider wilder than the horse, seldom make good domestic animals for the carriage or farm work.

MULES.—They are very common in these islands. Now and then they are seen ten or twelve hands high, but generally they are small and inferior. These little mules are used by the natives to bring their produce to market, and often present a ludicrous appearance, being so covered over with packs as to be hardly discernible.

POULTRY.—The hen-fever has reached the Sandwich Islands in a modified form. The Shanghai is said to be too delicate to be raised with profit, but makes a good cross upon the native fowls. Mr. H. M. Whitney has imported some black Spanish and Dorking fowls, which will make a better breed than either native or Shanghai.

HONEY-BEES.—Several efforts have been made to introduce bees into the islands as well as into California; and as the experiment has been successful in the latter country, we hope it will be in the former. Mr. Henry A. Pierce, of Boston, shipped a hive, packed in ice, last year, but we have never learned whether they reached their destination in safety. The Agricultural Society of Honolulu numbers one hundred and twenty-four members, who have paid \$620, while the Society has received \$500 from the Hawaiian Treasury.

One of the greatest obstacles in the way of agriculture is the indolence of the native inhabitants, who can not be induced to work for themselves or for others upon reasonable terms. There is a great difficulty in cultivating the lands in the interior of the islands, because there are no wagon-roads upon which to bring produce to market. There is also a great lack of capital among those who are disposed to apply it to the production of crops. Like almost all southern climes, this seems to be the home of all sorts of destructive insects, which the farmer has to contend against.

The surface of the islands is formed of decomposed volcanic matter, which is productive of many crops, and particularly of grapes, wherever it exists. Wherever tried, grapes yield most luxuriantly, and an acre well set in vines is valued at one thousand dollars; yet there are thousands of acres lying idle and waste, which might be rendered equally valuable.

A fruit called "papaya" is raised with facility from seeds upon any good soil, and is a wholesome vegetable, and much used for tarts, and makes a nutritious food for poultry and swine. It is stated that forty tons an acre can be produced of papaya, and a crop of pumpkins at the same time; the vines shade the roots of the plants, and those in their turn shade the vines. Another advantage of growing this plant is one that would make it highly valuable for this vicinity; for a tough piece of beef suspended among the leaves of the growing papaya is rendered perfectly tender in a few hours.

It is stated that the imports of flour, corn, rice, tobacco, and wine amount to \$125,000 a year, all of which might be produced at home without any difficulty.

GOVERNMENT PATRONAGE.

THE connection between our government and the various interests of the country, and the policy to be pursued in reference to them, has been a fruitful topic of discussion. Believing as we do that government is not a mere cold abstraction, nor a senseless machine, whose only business it is to crush what comes under its power in a manner contrary to the general notions of propriety, but rather an institution for promoting, by positive enactments, the good of the whole, and of its several parts, we fully agree with the spirit of the article below, taken from *De Bow's Review* for April, and we commend it to careful attention. Says this writer:

"General Washington, Mr. Jefferson, Mr. Madison, Mr. Monroe, and Mr. Adams, for a period of thirty-six years consecutively, all recommended an improvement of agriculture, or national schools; and the same principles and powers are involved in each of their recommendations, and no one of the subsequent presidents advising against it; Mr. Taylor and Mr. Fillmore strongly recommending, and their secretaries; the resolutions of legislatures, petitions of agricultural societies and of the people, and the interest of eighteen millions of our inhabitants, yea, of the whole, I ask, if all this combined is entitled to any attention, to any consideration? It has received but very little. But I am told there is a patent office, and the farmers are abundantly enlightened with the crumbs that fall from its table. The patent office, until 1831, during General Jackson's administration, when he called Mr. Ellsworth to it, was a burlesque, and is now, upon farming, compared with the wants of this great nation. Mr. Ellsworth was a practical farmer; but he had all to do, and nothing to do with. He was the first in that office to give any attention to agriculture. But the first appropriation for that object was in 1839, \$1000, for collecting agricultural statistics; in 1842, \$1000; in 1843, \$2000; in 1844, \$2000; in 1845, \$3000; in 1847, \$3000; in 1848, \$3500; in 1849, \$3500; in 1850, \$4500; in 1851, \$5500;—total, \$29,000 in seventy-five years. The cost of printing is not included, and can not be ascertained, as the report of the Commissioner was all published in one volume until the last two years. What can this small pittance do for this great nation? Scarcely enough in any one year to defray the ordinary expenses of correspondence.

The fund is to be distributed by the Commissioner of Patents, who is not selected for his knowledge of agriculture, (whose main business is of a different character, and more than he can do,) and may or may not be acquainted with it. The business must therefore be done by an unaccredited agent. Where is our agricultural department? Pent up in the cellar of the patent office, and can not be found at midday without a candle; and when found, a single clerk, struggling to get up the report. When it is up and out, there are but four hundred volumes for each Congressional district of one hundred thousand population, and that a reading people; and there is more call for this document than all others of a public character, and fast gaining in reputation from editors over the Union, and the public generally, inadequate as it is.

There is no country where the mind is so inquisitive and information so generally desired and possessed as in America. Travel over the whole world and return, and the truth is seen and felt more palpably. To us the masses of the world are looking for improvement, physically and morally, and for it

they seek us in thousands daily. In the United States there are but about thirty agricultural periodicals published, and there are five hundred thousand copies taken and read by the people—a mere drop to the ocean. There are agricultural journals in the State of New-York that have six times greater circulation than any single paper of the kind in Europe. This only shows how great the thirst we ought to assist in gratifying. In America, there is not an agricultural school aided or patronized by the government; and, in fact, it may be said, there is none at all. Some are just beginning to struggle for life, but the faint, feeble feeling of the general government infuses itself into every part of its great family, and paralyzes the whole body. There is not what may be regarded as a text-book in any branch of agriculture or rural economy in America.

Compare what America as a nation has done, with what has been done by other nations. I can but glance at it. Russia has in all sixty-eight schools and colleges. She has an agricultural institution with forty college buildings, occupying three thousand acres of land, and attended by several thousand students. The Agricultural Society of St. Petersburg was established by Queen Catharine. There are under the patronage of the French government seventy school-farms, besides five first-class colleges, in which professors are employed to lecture on botany, zoölogy, chemistry, agriculture, and the treatment of diseases in cattle; on the culture of woods, forests, etc. These are supported throughout the country. National establishments for the improvement of breeds of stock, and colleges for the education of veterinary surgeons, and investigating the uses of all discoveries contemplated for agricultural improvement. The government expend in three veterinary schools, a year, for instruction, 754,200 francs; for instruction in agriculture, 2,731,468 francs; for encouragement in agriculture, 700,000 francs; for improvement in the breeds of horses and science connected with it alone, 1,776,400 francs. The requirements for admission into these veterinary schools are as follows: The applicant must be not less than seventeen years of age, and not over twenty-five, and have the following qualifications: to be able to forge a horse or ox-shoe after two heatings; pass an examination in the French language, arithmetic, and geography, and after four years' study, is permitted to practise veterinary surgery, and receive a diploma. In Belgium, great attention is paid to the subject. There are a hundred agricultural schools or colleges established by the government—a high school of veterinary surgery. The science of agriculture is the most fashionable in the kingdom. They have their palaces furnished more or less with rare specimens of the products of the land, and are farmed like a garden. These facts I know, having travelled over considerable part of that country. In Saxony, they have five schools; in Bavaria, thirty-five; in Wurtemberg, seven; in Austria, thirty-three; in Prussia, thirty-two; in Italy, two; in Scotland, two; in Ireland, sixty-three. The one at Glassnevin, near Dublin, I visited. It now consists of one hundred and twenty-eight acres of good land, and convenient buildings, and are about to add to their farm, and increase their buildings, so as to accommodate one hundred or more students. With the teacher, Mr. Donaghy, I became acquainted. He is an intelligent, practical man. With him I viewed the farm, and their farming and buildings, etc., and it is carried on very successfully. These schools are doing more for Ireland than any other attention the government is giving them. They have colleges and agricultural schools in England sustained by the government—some four or five with large farms attached to them—where all the sciences connected with the general business are taught with great perfection, and millions of money

each year invested in the general science of agriculture by the nation. It is an investment, and not an expenditure. Other countries are engaged in the same business, but I can not go further into detail. Sufficient is said to draw a parallel between their views and ours. Abroad, they invest millions each year in a country not larger than an average of our States. Here, in all our country, for seventy-five years, for the general object we have expended \$29,000. * * * The number of agricultural societies in this country are thus given: New-York has a State society, and from seventy to eighty county societies. Pennsylvania has from twelve to twenty county societies, and many grouped together. Ohio has a State society, and seventy county societies. Massachusetts has twelve societies, and in many of these societies several counties together. Michigan has twenty county societies. Indiana, a State society. Kentucky, five county societies. Georgia, a State society, and fifteen county societies. South-Carolina has six county societies. Virginia has a State society, and three county societies. Maryland, a State society, and four county societies. Vermont, a State society, and four county societies, and was the first *State* to ask us to establish a National Board. New-Hampshire, a State society, and eight or nine county societies, and also asked Congress to establish a Board. Connecticut, a number of county societies. Rhode Island has also passed resolutions asking Congress to establish a Board. Maine has six county societies. Iowa, a State society, and six or eight county societies. Wisconsin, a State society. Illinois, three county societies. Tennessee has some county societies, and two years since, unanimously recommended a National Board. Florida has passed a resolution for a National Board. Louisiana, in 1848, passed a law for a Bureau."

SCULPTORS AND SCULPTURE.

DURING the middle ages, which extended from the sixth to the twelfth century, universal darkness prevailed. The arts and artists were alike unheeded and unknown. Faint glimmerings of light only are visible till about 1064, when the great cathedral or Duomo was commenced, under Buschetto, the first eminent sculptor in Italy. Venice was the first to establish her liberty, but Pisa first founded a native school of art. In 1154, Il Bueno, both an architect and sculptor, founded at Naples the Capuan castle, and erected the spires of St. Mark's at Venice. Niccola da Pisa introduced a decided improvement in sculpture. He was called Niccola of the Urn, from a superb work which he sculptured at Bologna, about 1225. His greatest work was the altar of San Donato, at Arezzo, which cost 30,000 gold florins. Giovanni Pisano was his son, and a distinguished sculptor and architect. Andrea Pisano, his grandson, produced several eminent works in the fourteenth century.

The great cathedral, called the Santa Maria del Fiore, in Florence, not only from its magnificence, but from the connection which it has with the history of more than one eminent artist, deserves especial consideration. The Florentines resolved to erect a cathedral which should exhaust the power of human skill. The work was commenced with great pomp. At the laying of the foundation, "the birth-day of the Virgin," great throngs were assembled, and the greatest enthusiasm prevailed. Free indulgences were granted by the Pope to those who contributed to the enterprise. The work was com-

mitted to Arnolfo di Lapo, who died soon after it was undertaken, and ere long his associate, Andrea Pisano, followed him. Here the work was left unfinished. Arnolfo's plans for the cupola were not understood, and the work was considered almost beyond human ability. This was near the commencement of the fifteenth century. But in 1420, the wardens determined that the cupola should remain unfinished no longer. Proposals were accordingly issued, inviting all eminent architects to meet in Florence upon a certain day, and present their ideas upon the subject. The day came. All nations, in their peculiar costumes and various languages, were represented. Each one was permitted to speak for himself. Some asserted that a huge scaffolding was necessary; others, that a column should be built in the centre of the church, etc., etc.

Among these artists was Filippo Brunelleschi, a man diminutive and deformed in body, but of remarkable intellect. He was first educated as a goldsmith, and he soon excelled in setting precious stones. He executed also small images in silver, and figures of half length which attracted much attention. Filippo became acquainted with Donatello, a young sculptor of great promise, with whom he was ever afterward very intimate, and by whose counsel he was often guided. Filippo turned his attention also to perspective, and did much to reduce it to a science; also to geometry, in which he became a proficient. These two friends often worked together, and with mutual appreciation. Among others, he presented a plan and design for reconstructing the two doors of the church of San Giovanni, which none were thought capable of doing since the days of Andrea Pisano. Lorenzo Ghiberti was the successful competitor, and both Filippo and Donatello pronounced his plan superior to theirs, and declared that he ought to be the artist. The two friends then departed for Rome. The sight of the magnificent churches and buildings of that city filled Filippo with surprise, and he determined, under the influence of the enthusiasm thus inspired in him, to devote himself to architecture, leaving sculpture, in which he had become eminent, to his friend. After a while he returned to Florence.

It was at this time, that the measures already described were taken for the completion of the cupola of Santa Maria, and that, among others, Filippo presented his plans and designs for that work. After the other rival artists had been called upon in turn, and each had given his own opinions, Filippo came forward, and assured them that the work could be done at much less cost than had been proposed, and without any scaffolding. He became at once the subject of ridicule, and was even ejected from the hall by force. He then urged his views upon the attention of the judges upon paper, and was at last able to convince them that his judgment was the best, and that the work should be committed to him. As it was a work of very great responsibility, however, it was judged that another should share it with him, and, much to his chagrin, Lorenzo Ghiberti, above named, was appointed his colleague. It was in vain that he protested, and he accordingly proceeded with his work, Ghiberti being often called upon to sanction the plans of Filippo. Soon, however, the latter was taken ill, and when the workmen still came to Filippo for his directions, he utterly declined giving any, referring them to Ghiberti, his colleague. But Ghiberti was utterly incompetent to direct them; and as Filippo did not hasten his recovery, the work came to a stand-still, and his colleague was obliged to confess that he was unable to proceed with or direct it. The wardens at last, seeing that such was the fact, gave the whole management to Filippo. He resumed his work with new energy, and was extolled as the greatest architect in the world. And this was true. His own plan

for the lantern was also accepted, though he had many competitors, and he was left to execute it alone. But in the midst of this project, he was called away. He died in 1446, deeply deplored, and was more honored when dead than when living. He was buried in Santa Maria del Fiore, the place of his noblest work.

DONATELLO, who has been so prominent in the scenes just described, was born at Florence, in the year 1383. From early life he devoted himself to sculpture. His first work which had especial reputation was the *Annunciation*, placed in the church of Santa Croce, in Florence. He also executed a crucifix, in wood, which was much admired. But the following scene, given us in the volumes of Mrs. Lee, is too good to be omitted :

"While all the world were admiring the crucifix, and the artist himself could see no fault in it, he conceived the idea that Filippo was cold toward it. At first he proudly determined to provoke no criticism by questions. At length, however, his pride yielded, and he said, 'You have never told me what you think of my work.' 'Are you not satisfied with the approbation you have received?' said Filippo. 'No,' replied Donatello, 'I must have yours. Come, tell me honestly if you see any faults?'

They took their station before the piece of sculpture; Brunelleschi looked long and earnestly at it. 'It is well carved,' said he; 'there is no fault in the crucifix.'

'Nay,' said Donatello, 'this is cold approbation; I demand of you, by our long friendship, to tell me truly what you think of the whole.'

Filippo knew the irritability of his friend; but, thus implored, he spoke: 'I have ever imagined the figure and form of Jesus Christ as perfect. The sublimity of his doctrines, the grandeur of his conceptions, and the sweetness of his character, have thrown a human idea of beauty over the whole. When I think of Christ, I contemplate him in his transfiguration on the mount, and I behold in him divine loveliness.'

'Well,' said Donatello, 'go on; what have I done?'

'Thou hast placed a boor on the cross. Look at his robust limbs, at the resolute, almost fierce look of his countenance. In vain I seek for the benign expression that must have distinguished the Saviour—the submission and resignation which triumphed over the agonies of death.'

'That is thy opinion, is it?' said Donatello, his eyes sparkling with sensibility. 'Were it as easy to execute a work as to judge it, thou wouldst not be so severe on my Christ. Thou hadst better try to make one thyself, after thine own idea.'

Filippo made no reply, but determined to try his skill. He worked laboriously and secretly for several months, neither Donatello nor any one else conjecturing his occupation. One day he invited his friend to dine with him, and, according to the custom of artists at that time, they went to the market together. When there, Filippo purchased various articles, and requesting Donatello to take them home, said he would follow. 'Do not be impatient,' said he, 'but look about and amuse thyself; I will be after thee in a few minutes.'

Donatello took the articles in his apron, and proceeded to the house. When he entered, the first object that struck his eyes was a Christ upon the cross, which Filippo had been secretly carving. Donatello, overcome with astonishment, let the contents of his apron fall, and when Filippo entered, he found him gazing in speechless admiration upon the Christ.

'Why, what hast thou been doing with my dinner?' said he, laughing.

'I have no appetite for dinner to-day,' said Donatello; 'I acknowledge

that thou alone hast executed as it deserved the figure of Christ. I see now that mine is a boor, as thou hast said."

This was Brunelleschi's Crucifixion, which, it is said, has aroused infidels to adoration. The two friends were more strongly united than ever.

In the Santa Maria del Fiore are two singing-boys, by Donatello, represented in alto-relievo, of uncommon beauty. In the Florence Gallery is a bronze statue, supposed to be a Mercury, which is thought to equal the works of ancient art. His marble statue of St. George is unrivalled.

His life is full of interesting incidents. He died in 1446.

U. S. AGRICULTURAL SOCIETY: CATTLE CONVENTION.

SPRINGFIELD, Ohio, May 1, 1854.

TO THE EDITORS OF THE PLOUGH, THE LOOM, AND THE ANVIL:

GENTLEMEN: The 25th, 26th, and 27th days of October next, have been fixed by the United States Agricultural Society, for holding its first Cattle Convention, in the city of Springfield, Clark county, Ohio.

Six thousand dollars will be distributed in premiums for the best stock of the various breeds of cattle subject to competition without territorial limit.

The Executive Committee of the United States Agricultural Society have been careful to select a time that will not, so far as they are aware, conflict with any of the State Fairs or other meetings of general interest; and, after due deliberation, have selected this place as the most eligible for holding the Cattle Fair. Springfield is centrally located as regards the cattle region; it is most convenient of access by railroad from almost every point of the compass. The means for accomminodating, at very moderate charges, a large number of persons, are ample. Private houses will be opened for the reception of guests. There are also eighteen cities and towns within reach by an hour's ride on the railroads, on which extra trains will be placed to accomodate such as wish to go elsewhere for lodgings.

About twenty acres of ground have been inclosed, and more than three hundred stalls will be prepared for the shelter of cattle during the Convention.

It is expected that very liberal arrangements will be made by all the railroad companies, both for the transportation of cattle and the conveyance of passengers to and from the Fair:

We respectfully solicit your attendance on the occasion, and that you will furnish us with such aid as you may feel disposed in making known the objects, time, and place of the Convention; and if you have improved stock of cattle, of any description, we cordially invite you to enter them for competition.

A list of premiums and a copy of regulations will shortly be published.

Very respectfully, yours,

J. T. WARDER,

C. M. CLARK,

CHANDLER ROBBINS,

} *Local Exec. Com.*

We respectfully request you to give this communication a prominent insertion in your paper, accompanied with such editorial remarks as may promote the objects in view.

[We commend the above to general attention, and shall refer to it hereafter.--EDS. P., L., AND A.]

A SPLENDID BARN.

FEW farmers can afford to erect a building equal to one that they can plan, and still fewer to build one like that described below. Still, we publish a description of it, because he who can not obtain all its advantages may secure a part. Perhaps some of them can be provided for in those already occupied. We ask especial attention to the manner of feeding. The italics in that paragraph are ours. The description was given, as appears below, by a correspondent of the *Rural New-Yorker*.—[Eds. P., L., & A.]

"A correspondent of the *Rural New-Yorker* gives an account of a barn belonging to David Leavitt, Esq., a merchant-prince of New-York city, who has a farm in Great Barrington, Massachusetts, pleasantly located upon the Housatonic.

It is two hundred feet in length, with a centre wing on the east side, three stories high, with an arched roof covered with tin, and a cupola on the centre, and erected at an expense of nearly \$20,000. It is based in a ravine which it spans, thus affording an easy entrance into the third story. Through this ravine runs a durable stream, with which is formed a beautiful reservoir of water directly above the barn, that operates upon a wheel twenty feet in diameter, thus forming an excellent motive power, that is used for a great variety of purposes, such as sawing wood and lumber, threshing, cleaning, and elevating the grain, cutting straw and stalks, unloading the hay, depositing it in any desired loft, churning, grinding, etc.

The first story is used as a manure vault; the second for stabling; the third for grain, hay, and apartments for domestics. The arrangement for feeding the cattle is most ingenious and convenient, the following description of which I give in the language of Mr. Wilkinson, namely: 'All the manual labor required in feeding the cattle is to run a car which contains twenty-five bushels of feed, before the line of cattle, and shovel the food into the feeding-boxes, which are of cast-iron, quadrant-shaped, of about one bushel capacity, and one to each stall. The boxes are placed one on each side of a partition, that divides two stalls, and are each attached at the right angle corner of the box to the front partition-stud by hinges, so that the boxes may be swung around into the feeding-hall, in front of the cattle, and over the feeding-car, that the feed which spills in filling the boxes, may fall into the car instead of on the floor. After the boxes are filled, they are turned with a slight touch, before the cattle again. In the centre, between the next or adjoining pair of stalls, is an erect cylinder, two feet in diameter at the bottom, and one foot eight inches at the top, which projects equally into each stall, and extends from about a horizontal line with the tops of feed-boxes (on the opposite side of the stalls) to the upper surface of the hay-loft floor, directly over the cattle, that it may be filled from that floor. There is a circular aperture six inches in diameter, in each side of the *hay-tube*, at a convenient height from the floor, so that two animals may eat from the tube at the same time. Under the tube is a drawer into which all the loose hay-seed falls through its latticed bottom, which drawer, when full, is emptied, and when a large quantity of seed accumulates, it is cleaned for use or market. *The seed obtained is of a superior quality, and the quantity ordinarily saved by this arrangement will pay for all the manual labor required about the building throughout the year.* Across the front of the stalls there is also an ordinary box-manger, directly under which, and running the whole length

of the stable, is a trough for water, with suitable opening in the bottom of the manger through which the cattle may be watered by removing the iron slides that close them, which is done by means of a lever opening the line of slides at once, and in an instant.

The very great economy and convenience of this arrangement is obvious at a glance, and may be taken as a specimen of the perfection exhibited throughout. Under one of the drive-ways, into the third story, is an arched room, well ventilated, and lighted with a glass front, which is used as a milk-room, and has a great many conveniences connected with it for diminishing the labor of taking care of the dairy, which can all be performed without the least exposure to the weather, and within the compass of a few feet. The herd is fed with hay, cut feed, and steamed roots that are reduced to a pulp by the revolution of a cylinder in which the roots are placed after steaming, with four cannon-balls of ten pounds each; and, I believe, during the summer season, the soiling system is to be practised in part. The building is well lighted and ventilated, so that no diseases are generated by the confinement of impure air and the deleterious gases, an important feature that is too often overlooked. On the side of the barn facing the Housatonic, which is but a few hundred feet distant, are projections of cut stone, so arranged as to convert the water which falls over them into a sheet of foam, from which it justly derives its name of *Cascade Barn*."

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

WORK—WORK RIGHT, WORK EVER.

LET the cobbler stick to his last. This is an old adage, and if I were to strictly observe its mandate, might never venture a line for publication. But such is the waywardness of man, that he is seldom satisfied to stick to one thing always. No; *change* and *variety* is rather more congenial to his nature. For an humble farmer in the hill-country of East Tennessee, who can only lay claim to the name by occupancy, since all his earlier energies were engrossed differently, to now turn agricultural writer smacks somewhat of strangeness; and that, too, to first meet the eye of thousands of well-experienced practical men, deserving the name, ought well nigh to prove too much embarrassment for me. But, disclaiming here any vanity at all about seeing my desultory and perhaps useless ideas printed, and relying upon the more ripe discretion of *The Plough, the Loom, and the Anvil*, with many thanks to its generous conductors for the information it has yielded me, I come now humbly, I trust, to award them—and next, if I should say a word thought to be of any value, and it shall appear, I shall be amply requited. *Let the cobbler stick to his last.* Yes, and why not—hammer, lapstone, and awl? Well, this lays down a principle of assiduous application to work for the cobbler. Let it be understood, too, that it impliedly forbids meddling with other matters. Then, brother farmer, let me drop you, as meekly as I may, but with as much candor, the key of success in farming. *Work*, and work right, and work ever, and success is bound to be the result. But, when some of our farmers who turn to other pursuits, and make farming a *dernier ressort* to kill time, may truly complain of the barrenness of this occupation in furnishing suitable matter for the press. Why, it is said by many that farming is merely

a consecutive bundle of experiments adapted to the great order of nature. Admit it—and the same might be said of steam, of electricity, magnetism, etc., etc.—and what, I ask, would be fate of all the wonders of nature and art of man, if God did not speed the plough? It is, we know, inconvenient for planters to meet together in organized bodies, and deliberate like others upon questions of policy that interest them. Then they should, (should they not?) read, correspond, note down experiments, study to shorten and lighten labor, fertilize the soil, grow the best seeds of the best crops, raise the best stock, the most valuable fruits, the healthiest vegetables, and build the most durable fences, dwellings, etc. A farmer's own interest always prompts him to raise a surplus of that which is most marketable in his locality; and, as for market, I have heard the remark, that he that has nothing to sell is farthest from it. Already, and long ago, have our worthy farmers known that education, to their children, is of much importance; and much to their praise be it spoken, again and again, that they carry out the thing to the very letter. Our greatest, best, most conspicuous, most learned, and most honored men, are mainly farmers or farmers' sons. Then, as of cobbling, so of farming; as I borrow the adage, I return it—Let the cobbler stick to his last, and I add, the farmer to his plough.

A. L. B.

Mill-Bend, Tenn., April, 1854.

PROPER USE OF GUANO.

THIS is a fruitful topic, on which much more light is needed. With the view of adding something in this way, we give place to the following judicious article in *The Farmer and Visitor*. It deserves careful attention.

MR. EDITOR: All the agricultural papers teem with articles on the use of guano, which declare chemical principles and practical experiments. One says, "Do not mix it with plaster—as I have tried it." Another puts *half a shovelful* of hen-dung (guano) in a hill of corn, and the corn utterly failed; yet the same writer says, "to guano a small quantity of house-ashes or caustic lime might be added advantageously, and perhaps a small quantity of gypsum would be of use." These are experiments of theory and practice, without any *true principle* to guide. Just as well (and it is strange the farmer does not seize the idea as of universal application) might the wheelwright expect to make a symmetrical circular wheel by hewing out the hub, taking sticks for spokes of any shape and dimensions, and setting them at random in the hub, as that the farmer, who is now most rapidly becoming a "Practical Chemist," can usefully, economically employ purchased or any manures unless *intelligently*.

Some look upon guano more mysteriously, because it comes from the other side of the continent—from desolate, rocky islands, and covered there many feet deep—sold in the cities at a great cost, and brought up into the country; yet it is, after all, nothing more nor less than the "manure of the *hen-house*." There is no rain in the regions of these islands; hence it is *preserved*. All rocky islands inhabited by sea-fowl would furnish guano, if their climate were dry; but now it is decomposed and washed into the sea in all moist climates.

In this neighborhood, *fifty tons* of guano have lately been purchased from New-York; and it is a very important matter, therefore, whether or not the cost, \$2500, is to come back into the pockets of the farmer or be a dead loss

Should they put half a shovelful into each hill of corn, or spread it on the barn-floor "to slack," or grind it at the mill, or mix it with caustic lime or ashes, there would in every case be a loss.

Guano kept in bags wastes on the same principle that the druggist loses his ammonia or harsthorn, if the bottle is left open, and how rapidly if he pours it out into a dish.

The smell of ammonia passing off is always present; the closest cask, therefore, keeps it best.

Seeds put into guano, or on it, where in quantities, and covered, are "burned," like the manure-heaps when the heat of fermentation is too great.

Guano mixed with sand would certainly not be acted on by the sand; and guano, it is believed, when mixed with plaster, is not at all affected by it. Guano mixed with ashes is rapidly decomposed, and with lime more rapidly than by ashes.

I have made these experiments in a way that can be repeated by the farmer; and if you please, I wish you to repeat them. I send you inclosed a sheet of red litmus paper for the purpose.

If you take tea-cups, and place in one a tablespoonful of guano, mix the same quantity of guano with an equal part of plaster in another, and with ashes and lime in two others. Cut the sheet into squares, wet them in clear water, and lay one tight over each cup, and observe the change, from red to blue. The rapidity of the change, and the intensity of the blue tint, will illustrate the passing off of the ammonia in the gaseous form.

The decomposition with ashes and lime was exceedingly rapid; the other two seemed to advance about equally, unless the guano alone exhaled more ammonia than when mixed with plaster.

If the plaster acts on the guano to separate ammonia, the sulphuric acid must take it and form sulphate of ammonia, set free the lime. Guano, mixed with common salt, does not seem to lose ammonia, and if the two are decomposed, still the ammonia ought to be retained, in combination with the chlorine, as sal ammoniac. The first point is to retain the ammonia; and any compost of guano that does not act to set free the ammonia, can not be injurious.

De Bow's Review for May also contains the following excellent remarks upon the uses of guano as a fertilizer, based upon the experiments of D. J. McCord, an intelligent planter of South Carolina:

"LANGSYNE, March 22, 1853.

MY DEAR SIR: In the winter I reside entirely on the plantation here, and my post-office is Fort Mott. Your letter, being directed to Columbia, was not forwarded to me until yesterday. I fear now that my answer will reach you too late, especially if you wish to apply guano to your corn. For many hereabouts have planted, or nearly done. I am not half done. But to begin with my answer.

For two years I mixed four bushels of dry sand with one bushel of guano. This year, to save trouble, I will mix two bushels of sand to one of guano. Fine charcoal, taken from the railroad, a blacksmith-shop, or coal-kiln, is excellent, because, like gypsum, it will retain the ammonia; any dry, fine dirt, will do as well as sand. My object for mixing is to increase the quantity to be put down more accurately by dull and careless hands.

My mode of mixing is this. I take for the purpose some dry shed—free from the wind is better, for it may mix and blow away much of it. I then take a coarse iron sieve and sift a layer of sand, and on that a layer of guano,

until I get it all mixed for the field. If the sand or earth is damp, it will cause evaporation and loss. When thus prepared, you may put it into the ground just before you plant, or a month before. If put under the seed of corn or cotton, it should be covered by the plough or hoe two, three, or four inches, so that when you put the seed in the ground over it, there may be two, or three, or four inches between the seed and guano; for if they come in contact it will kill the seed; but by the time the roots reach it, it will be diffused in the soil, and nourish and not destroy it.

I have only once tried it on an acre of corn. It was a very unfavorable year for corn, being dry. I put a tablespoonful (not heaping) of guano in each hill, and covered it with fresh earth, and the corn was then covered about two inches. The adjoining acre was manured as usual with stable-manure and cotton-seed mixed.

The acre manured with stable-manure and cotton-seed was seven or eight inches high, while that manured with guano was so small and so wretched that I had some idea of cutting it up and replanting them. It rained, and in one week afterward the guanoed corn was as large as the other, and soon became larger, and with much stouter stalks, and continued much the largest, yielding much better fodder; but the produce of corn was about the same, each acre producing between sixteen and seventeen bushels. I planted in five-foot rows the stalks two feet apart. A tablespoonful a hill will take from 180 to 200 lbs. But if I were intending to use guano on corn, I would not put the guano to it until it was up, and at the first ploughing run a bull-tongue near the corn, and sprinkle the guano opposite the corn—a tablespoonful on each side might do, or half a tablespoonful on each side. It must be followed by another plough, and covered immediately. I have heard of much less doing. I have never made any other experiment with corn.

A bushel of guano weighs 58 lbs.

Now for cotton.

On cotton, I have used guano for three years.

The first year my experiment was a small one, but clearly showed the importance of guano.

In 1851, I manured twenty acres old, worn-out red lands with two hundred pounds guano to the acre. It yielded:

| | | | | | | | | |
|--------------|---|---|---|---|---|---|---|----------|
| 1st picking, | - | - | - | - | - | - | - | 900 lbs. |
| 2d " | - | - | - | - | - | - | - | 1,700 " |
| 3d " | - | - | - | - | - | - | - | 4,995 " |
| 4th " | - | - | - | - | - | - | - | 4,053 " |
| 5th " | - | - | - | - | - | - | - | 76 " |

11,724 lbs.

Average per acre, 616½ lbs.

One acre adjoining, same quality exactly, unmanured, yielded:

| | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---------|
| 1st picking, | - | - | - | - | - | - | - | 00 lbs. |
| 2d " | - | - | - | - | - | - | - | 00 " |
| 3d " | - | - | - | - | - | - | - | 60 " |
| 4th " | - | - | - | - | - | - | - | 108 " |
| 5th " | - | - | - | - | - | - | - | 76 " |

244 lbs.

Difference per acre in favor of guano, 372½.

In 1852, I manured 36 acres with 180 lbs. per acre. It produced 31,540

lbs. seed cotton, or 875 lbs. to the acre. More than half of the land was very old, sandy land, never manured; the rest inferior, old red land. Of the adjoining acres unmanured, my overseer by mistake did not keep the weights; but I do not believe that it averaged 450 lbs. At that rate, the difference was 426 lbs. per acre.

For 1853, I intend to manure 34 acres with 174 lbs., which is 3 bushels of guano, and 10 acres with 100 lbs. to the acre. I am told that quantity produces well, and perhaps pays best, costing so much less. One of my neighbors last year used 1 bushel (58 lbs.) per acre. He kept no account of weights. His overseer told me that he thought it produced more than twice as much as that not manured.

Now for my mode of putting down.

My acres are 42 compasses square—60 rows to the acre.

To put down 174 lbs. to the acre requires 3 bushels guano; and if 2 bushels of sand or dirt are put to each bushel of guano, it will take of the mixture 4 quarts, 1 pint, and 1 gill to each row.

To put down 100 lbs. to the acre of the same mixture requires 2 bushels of guano, (less 1 gallon,) and takes 3 quarts of the mixture to the row.

If you mix 4 bushels of sand to 1 of guano—

17½ bushels of mixture will give 200 lbs. to the acre.

15½ bushels of mixture will give 180 lbs. to the acre.

15 bushels of mixture will give 174 lbs. to the acre.

13½ bushels of mixture will give 150 lbs. to the acre.

So you must make your calculation in proportion to the material you mix with the guano, and divide by the number of rows in your acre.

Let each hand have a small box to hold the quantity measured out of the bags for each row, and take care that it hold out as even as it can be put. They soon learn, after trying one or two rows.

You must not attempt to put it down in windy weather, or it will be blown away. Take out what you want for the day only, in bags, to keep from wind, and covered, if rain should come, for it would be injured by getting wet before covered in the ground. I forgot to say why you should sift it. In the first place, you mix it better by so doing; and beside, the guano has many lumps, and by sifting you get them out, and should break them in a mortar or trough, so as to mix it with the earth; otherwise these lumps would burn up every thing.

I believe I have told you all I know. Gypsum is said to be excellent for mixing with the guano; and no doubt it would be so, as it would retain the ammonia.

This year I bought guano in New-York. It cost me, delivered here at Fort Mott, \$50 for 2000 lbs. If many planters would unite and take a large quantity, it could be got still cheaper. By the new charter to the railroad to Columbia, they can only charge 12½ cents per 106 lbs.

The fullest account that I have seen of the methods of using guano, is an Essay on Guano, by J. E. Teschemacher, Boston, 1845. It was distributed some years since, to those who bought guano, gratis. It was published by A. D. Phelps, 124 Washington street, Boston, from whom, perhaps, it can be had; and by Saxton & Huntington, 295 Broadway, New-York.

I have been amused with some of the modes I have seen recommended by knowing ones in the newspapers, namely, rubbing the cotton-seed with it, etc. It killed the seeds wherever it touched it, the first year I used it; and my gardener, not regarding my cautions, burnt up every thing.

Let me know how you succeeded with your guano. I hope you will receive this in time."

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

PLANTING IN MISSISSIPPI.

BY H. W. STACKHOUSE.

I WILL now endeavor to redeem my promise, by giving you something on the planting in this portion of Mississippi, being the southern border of this county.

I do not offer my remarks for the purpose or with the expectation of instructing my brother planters. I present them, that you of the North may have an idea what we are, and how we manage our crops.

The annalist, when he gives the history of a campaign, endeavors to present, before the mind's eye of the reader, the topography of the country where the events have transpired. The same should be the course of the agricultural writer. To understand the mode of farming which he wishes to delineate, it is necessary he should offer a cursory view of the country, and the growth, color, and depth of soil.

Our uplands are generally gently rolling, except where they border on the streams; very often they terminate in abrupt hollows, forming ridges, frequently not thirty feet across. Our level land is found on our streams. Most of these streams only flow in the winter, or in wet weather. Very often when we pass from the upland to the lowland, we strike a slip of wet land, lower than that on the margin of the stream. This kind of land is a great trouble to us; it is either too wet or too dry, too hard or too soft, where ditching renders a very poor equivalent for the expense. To make it available, we should sink a ditch at the brow of the hill, another in the lowest part, then cause the rows to point to the latter ditch. After leaving this wet land, we come to a rich body, bordering the stream, the width of either being governed by the size of the stream.

The growth on our uplands embraces pine, several varieties of oak, dog-wood, muscadine vine, and red elm. On the best cotton-land, in addition, we have hickory, two kinds of gum, slippery-elm, the bunch-grape, with an occasional poplar and walnut, and also chestnut; but where the last grows, the soil is rather too sandy. The lowlands have all of the above, the pine being very scattering, indicating a poverty of soil. We farther have the magnolia, linden, and wild peach, on the best; whilst on the second-rate, considerable beech and holly. We have other trees, but these, I think, are sufficient.

Our upland soil is from two inches to six in depth, based on a close, tenacious, yellowish clay, with almost all shades of color from gray to black. That on the margin of the streams is in depth six inches to a foot, color a light snuff to a black, based on a light-colored, sandy clay. The wet land is whitish, terminating in a sub-soil of the same appearance. The most distinctive feature of this land is a soft pebble, of the size of buck-shot, being a species of iron-ore, which is black within and yellowish without. This pebble extends into the sub-soil two or three feet, or until it reaches another stratum of earth.

Our lands are deficient in lime. I think that deficiency affects the staple of our cotton. In my next I shall treat on rotation of crops and the oat-crop.

Hinds' County, Miss., April, 1854.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

WOOL-GROWING IN LICKING COUNTY, OHIO.

LICKING COUNTY claims, and we believe justly, to be the banner county of the United States in wool-growing, having nearly two hundred thousand sheep, many of them the very best Saxon and Merino, and a soil and climate well adapted to growing the best of wool. Our farmers also, being in the habit of keeping their pastures free from burrs, and washing and putting up their wool in the best manner, it is a field well worthy the attention of the manufacturer who purchases his supplies of this material from the grower. He will find it to his interest to visit us about the first of June, and see for himself. Also, persons wishing to improve their flocks will find all the varieties of fine-wooled sheep, in the greatest perfection, not excepting some of the best imported French and their descendants, with some good middle-wooled sheep.

W.

CORN CROP: ITS MODE OF CULTIVATION.

MR. LUTHER GILBERT, of Grantville, Mass., thus reports his crop and his cultivation.

TO THE COMMITTEE ON GRAIN CROPS:

GENTLEMEN: The field of corn entered by me for premium, contains two acres; the soil is a black loam generally, and part of it a mixture of gravel. The condition of the field was poor; it was sowed down to grass in the fall of 1846, without any manure; it has been in grass ever since, until September, 1852, when I had it broken up about ten inches deep. The manure used on this field was a compost, made entirely between the 18th of November, 1852, and the last of April, 1853, from one horse, one cow, and sods taken from the above field and composted in my barn-cellar by my hogs. As the bulk of the manure was taken from the same field to which it was returned, I shall only estimate the value of the horse and cow-manure, the use of the hogs for composting, and the carting the sods into the cellar, as that was the only cost to me. The compost was carted directly from the barn-cellar (without turning over) about the last of April, and spread as evenly over the whole field as it could well be, and immediately ploughed in. The quantity spread in this way was about sixteen cords to the field, (or eight cords to the acre;) it was then harrowed and furrowed both ways, three feet four inches one way, three feet the other. There were about two cords of scrapings of the cellar put in the hill; on such parts of the field as the soil was poorest, one shovelful in the hill. On the 10th and 11th of May, I planted it with the Plymouth-county corn, putting six to eight kernels to each hill; cultivated and hoed it twice, taking out all but five, and sometimes four, stalks at hoeing-time.

On the 18th of October, the Society's committee, after examining the whole field, selected two places in separate parts of the field, and measured one square rod in each, which the committee considered to be a fair average of the whole. They measured from the centre between two rows, and gathered, shelled, and weighed each rod separately. The first rod weighed $44\frac{1}{2}$ lbs., the second $46\frac{1}{2}$ lbs., making the average $45\frac{1}{2}$ lbs. to the rod; reckoning

56 lbs. to the bushel, as per rule of the Society, and it gives me 129 16-56 bushels to the acre. The corn was well ripened, and I commenced on the same day to harvest it.

DEBT AND CREDIT ON THE ABOVE FIELD.

| | |
|---|----------|
| Land valued by the assessors at \$225 an acre, interest on ditto, - | \$27 00 |
| Taxes on the same this year, - - - - - | 2 56 |
| Ploughing in September, 1852, - - - - - | 5 00 |
| Carting sods into barn-cellar for hogs at sundry times, - - - | 10 00 |
| Manure of horse and cow, 5½ months, - - - - - | 8 00 |
| Use of hogs to work over sods and composting, - - - - - | 10 00 |
| Applying manure, \$10; ploughing, harrowing, and furrowing, \$6, - | 16 00 |
| Seed-corn and planting, \$3.50; cultivating and hoeing, \$6, - - | 9 50 |
| Cutting stalks and harvesting, - - - - - | 16 00 |
| | <hr/> |
| | \$104 06 |

VALUE OF CROP.

| | |
|---|----------|
| Stalks and husks, - - - - - | \$30 00 |
| 258 4-7 bushels shelled corn, at 90 cts., - - - - - | 232 20 |
| Increased value of land, benefited by manure, - - - - - | 14 00 |
| | <hr/> |
| | \$276 20 |
| Deduct cost as above, - - - - - | 104 06 |
| | <hr/> |
| | \$172 14 |

INCOMBUSTIBLE WASH, AND STUCCO WHITE-WASH.

The following preparation has been recommended as of great value, in several of our exchanges, but appeared originally, we believe, in the *Railroad Journal*. We give it to our readers as we find it. Some of our acquaintances have used it, and value it highly.

The basis for both is lime, which must be first slacked with hot water, in a small tub or piggin, and covered, to keep in the steam; it then should be passed, in a fluid form, through a fine sieve, to obtain the flour of the lime. It must be put on with a painter's brush; two coats are best for outside work.

First. To make the fluid for the roof, and other parts of wooden houses, to render them incombustible, and coating for brick-tile, stone-work, and rough-cast, to render them impervious to the water, and give them a durable and handsome appearance. The proportions in each receipt are five gallons. Slack your lime as before directed, say six quarts, into which put one quart of clean rock-salt for each gallon of water, to be entirely dissolved by boiling, and skimmed clean; then add to the five gallons one pound of alum, half a pound of copperas, three fourths of a pound of potash—the last to be gradually added; four quarts of fine sand or hard-wood ashes must also be added; any coloring matter may be mixed in such quantity as to give it the requisite shade. It will look better than paint, and be as lasting as slate. It must be put on hot. Old shingles must be first cleaned with a stiff broom, when this may be applied. It will stop the small leaks, prevent moss from growing, render them incombustible, and last many years.

Second. To make a brilliant stucco white-wash for the buildings, inside and out. Take clean lumps of well-burnt stone-lime; slack the same as before; add one fourth of a pound of whiting or burnt alum, pulverized, one pound of loaf or other sugar, three pints of rice-flour, made into a very thin and well-boiled paste, starch, or jelly, and one pound clean glue, dissolved in the same manner as cabinet-makers do. This may be applied cold within doors, but warm outside. It will be more brilliant than plaster of Paris, and retain its brilliancy for many years, say from fifty to one hundred. It is superior; nothing equal. The east end of the President's House, in Washington, is washed with it.

PATENT FERTILIZERS.

THE business of manufacturing fertilizers, like many other kinds of business, good in themselves, is so easily converted into a swindling speculation, that we have not had the disposition, oft-times, to encourage it. If the proprietor is honest, the workmen may not be so; and though self-interest may direct both to honesty in such business, it urges also to the same course in all other business, and yet how often is its voice unheeded. With regard to fertilizers, if half or even a quarter of the quantity sold is "genuine," and a useful article, puffs enough may perhaps be secured to make sale of the other three fourths to those who would try a hopeful experiment. All samples direct from the manufactory, *as a test*, fail, in our view, to prove the value of articles in general, and especially of that bought of second hands; and unless there is some indorsement by uninterested parties, of competent skill, we should ever feel some doubt as to the actual worth of the mixture.

But we fully accord to the remarks of our neighbor of the *Agriculturist*, below, and can see no possible objection to the proposition of Mr. De Burg, as here set forth:

"There is so much opportunity for deception or collusion on the part of manufacturers of various artificial fertilizers, that we have uniformly declined to publish reports of experiments made to test their value, and we have refused to receive samples of any kind of special manures for our own experiments, if we were asked to publish the results. We have no confidence in the specimens put up for such experiments or for analysis; neither do we value the results obtained by the first samples sent into the market for sale, for it is to the interest of manufacturers to furnish a good article at first, even if at a loss. These doubts we have expressed plainly to different manufacturers, to Mr. De Burg among the number.

Mr. De Burg, however, has called upon us, and made a proposition which we think obviates the above objections, and we cheerfully lay it before our readers; and we will with the same cheerfulness give the free use of our columns to any other manufacturer who will make a like fair and open proposition. Mr. De Burg's proposition is as follows: He will furnish, at his own expense, three to five hundred pounds (or more if desirable) of his superphosphate of lime, to any agricultural society, or club, or association of men, who will give it a fair trial, and report the results, favorable or reverse; and mark, ~~as~~ the samples for experiments are not to be taken from the factory, nor from any particular lots, but from any that has been or may be sent into market. To prevent any chance for deception, those proposing to make such

experiments may first select their samples from any they can find in the country, and then apply to Mr. De Burg, and he will give an order for its delivery to them free."—*American Agriculturist*.

Persons wishing to try the super-phosphate, as proposed, can obtain it by addressing C. B. De Burg, Williamsburgh, N. Y.

THE AMERICAN CAMEL COMPANY.

A PAMPHLET has been given us by the Chairman of the Commissioners, Mr. Wm. G. King, containing the act of incorporation of this Company, which was granted by the State of New-York in April last, and with it the natural history of that useful animal, the camel. Perhaps we can do no better service than to give this history, in its essential features, a place in our pages.

This company purposes to introduce the camel into this country. They say, quoting from the late report of the Secretary of War :

"The absence of navigable streams in a large portion of our recently-acquired territory, and the existence of the vast arid and mountainous regions, described in another part of this report, have entailed upon the government a very heavy charge for the transportation of supplies, and for the services of troops stationed along our new frontier, and operating against the predatory and nomadic Indians of those regions. The cost of transportation within that country for purposes connected with military defense, amounted, in the year ending June, 1853, to \$451,775.07.

The modes of transportation now used—wagons drawn by horses, mules, or oxen—beside being very expensive, are necessarily circuitous on the routes travelled, slow, and generally so unsatisfactory, as to prompt inquiry for means which may be attended with better results. In any extended movement, these wagon-trains must depend upon grass for forage, and their progress will seldom average more than twelve miles per day ; and it often happens, in traversing the country just referred to, that long spaces are encountered in which there is neither grass nor water, and hence the consequence must be severe privation and great destitution of the animals employed, if not the failure of the expedition. These inconveniences are felt in all movements between the distant parts of that section, and seriously obstruct, sometimes actually defeat, the pursuit of the mounted Indians of the plains, who, by their intimate knowledge of the places where the small supplies of water and grass are to be found, are able to fly across the most arid regions after having committed depredations on our frontier population, or upon the trains of merchants and emigrants.

Beyond the difficulties here contemplated in connection with transportation to the interior, it is proper to look to those which would arise in the transportation of supplies for the defense of our Pacific coast in a contingency of a war with a maritime power. Our experience has been confined to a state of peace, and to the use of routes of communication which pass beyond the limits of our territory. Reasoning from the difficulties which have been encountered in supplying points where it was necessary only to traverse a part of the space which lies between the Pacific coast and the points of supply, it may be claimed as a conclusion that it would not be practicable,

with the means now possessed, to send across the continent the troops, munitions, and provisions which would be required for the defense of the Pacific coast. A railroad, such as has been contemplated to connect by the most eligible route the Mississippi River with the Pacific coast, would but partially remove the difficulties. It would serve to transport troops, and to supply depots along the route and at the extremity of the line, but there would still be vast regions of the interior too remote from its depots materially to feel its effects."

THE NATURAL HISTORY AND COMMERCIAL VALUE OF THE CAMEL.

General Characteristics.—The camel, belonging to the class of ruminants, is one of the larger quadrupeds, being six or seven feet from the ground to the highest part of the back, and carrying its head, when erect, about nine feet above the plane on which it stands. The carcase weighs about three or four hundred pounds; but the size and weight are far from being alike in all. The neck is long and slender, and seems to grow out of the lower part of the body, between the fore-legs. The head is small, and the ears short. The eyes are of various colors, from a black to almost a white, bright and sparkling with instinctive intelligence, and placed on the sides of the head in such a manner that the animal can see before, behind, and on every side. The tail is short, and hangs down, with a small bunch at the end. The legs are long and slender, though their points are stout and strong. The feet are divided somewhat like those of an ox, with hoofs on the extreme points of the toes. The soles are soft, yielding, and remarkably broad.

The camel is generally of a light color, from which it varies to a dark-brown, and sometimes reddish-brown; it is also marked with white spots or stripes on the forehead and on different parts of the body. It is subject to the mange, to cure which the Arabs bedaub it with *kitran*, or tar. Physiologists, in accounting for the peculiar property of the camel in resisting the want of water, have supposed that it is provided with an additional stomach, of peculiar conformation, to retain what is imbibed. But it does not appear that there is a particular reservoir for the purpose; and there is reason to think that the same end is attained by the singular structure of the second stomach, being composed of numerous cells, several inches deep, the orifices of which are apparently susceptible of muscular contraction. It is conjectured that when the animal drinks, it has the power of directing the water into these cells, instead of allowing its passage into the second stomach. From the structure of the second stomach, it neither receives food in the first instance, nor does it afterward pass into its cavity. The orifice of the cells composing it are so constructed as to prevent the entrance of solid food into them.

Fleece, Fodder.—The camel annually casts its hair, in the spring; and it all goes, to the last fragment, before the new comes on. For about twenty days it is as naked as if it had been shaved from head to tail. While in this state, it is extremely sensitive to cold, rain, and the annoyance of flies, from which latter its keeper is careful to preserve it by the application of tar. But by degrees the hair grows again. At first it is extremely fine and beautiful, and when it is once more long and thick, the camel can brave the severest frost. The fleece of an ordinary camel weighs about ten pounds; but its color and abundance depend entirely on the particular species of camel and the climate which it inhabits. That of the Arabian camel is thin and whitish; that of the Bactrian camel, thicker and darker-colored. From

the hair a coarse kind of clothing, almost impermeable to water, is made for camel-drivers and shepherds; and the same commodity, for an analogous purpose, is used as wrappers of merchandise long exposed to wet in heavy rains. But in Persia and the Crimea, more valuable manufactures are produced in narrow cloths of different colors, and fine stockings, of which white are the highest-priced. It is wrought into shawls, carpets, and coverings for the tents of the Arabs. The Tartar women of the plains manufacture a kind of warm, soft, and light narrow cloth from the hair of the Bactrian camel, preserving the natural colors. The hair, of different colors, is an article of export from Asia and Africa; its value is proportioned to the fineness and depth of color, that which is black being the dearest.

Milk, Flesh.—The Arab generally rises before early dawn, and his first task is to milk his camels, who have been prevented straying away from his tent during the night, by tying up one of their legs and fastening it with a noose; while at the same time he removes a net which is placed so as to prevent the young camels sucking the mothers, until a certain portion of the milk is drawn for the use of the tent. The milk is excellent, both for butter and cheese. The natives of Africa esteem camel's flesh more than that of any other animal. It is related that Heliogabalus had camel's flesh served at his banquets, and that he was especially partial to the foot. This latter dainty the emperor had the honor of discovering.

Food, Sustenance.—The camel feeds on thistles, on the stunted shrubs and withered herbage of the desert, and can pass successive days in total want of water; thus seeming as if purposely designed by nature for the most cheerless and inhospitable regions. It is exceedingly fond of the huge, succulent leaves of the cactus, the strong, needle-like thorns seeming to act upon its leathern palate as an agreeable stimulant. It also munches with great gusto the dry bones with which the routes in the desert are strewn. On long journeys over a desert destitute of herbage, a few beans or flower-balls, or a little barley, suffice to enable it to perform its task. Over large expanses of desert, where the soil is dry and powdered with saline matter, the water, when water there is, is brackish. This want of fresh streams is very unfavorable to cattle, but occasions no suffering to the camel, which delights in salt in every shape.

Intelligence, Docility Training.—The camel grows up like a child under the tent of its master, partakes of his plenty as well as his penury, enjoys his songs, and understands his bidding. Its docility springs from habit and reflection—nay, we may almost say from moral feeling; for it rebels when its temper is not sagaciously managed. When the French went to Algiers, and got possession of camels, they thought that their obedience might be enforced, like that of mules and asses, by simple beating; but they soon showed their conquerors that they were not to be so treated, and that both their kick and their bite were rather formidable. The Arabs assert that the animal is so sensible of ill-treatment, that when this is carried too far, the inflictor will not find it easy to escape its vengeance. Eager, however, to express its resentment, it no longer retains any rancor when once it is satisfied; and it is even sufficient for it to believe that it has avenged its injury. When an Arab has excited the rage of a camel, he throws down his garments in some place near which the animal is to pass. It immediately recognizes the clothes, seizes and shakes them with its teeth, and tramples on them in a rage. When its anger is thus appeased, it leaves them, and the owner may then appear and guide it as he wills. There is no trouble in littering or feeding the camel. As soon as its load is taken off, it is turned out to graze

on whatever it can find around its owner's tent, and never looked after until it is again required to continue its journey. At other times it shelters the weary traveller stretched along the sand, watches over his slumbers, and like the faithful dog, warns him of the enemy's approach. Its instinct enables it to smell the distant water, and it recognizes the spot with wonderful precision. It is the very type of patience, fortitude, and perseverance. Charged with a heavy load, constantly travelling over the sand—from which its nostrils, shaped like narrow oblique slits, and provided with a sphincter muscle like the eyelids, are defended with hairs at their margins—exposed to hunger, thirst, and the hottest rays of the sun, it suffers the fatigue and pain with incomparable meekness. It lies down on the burning sand, without betraying the least degree of impatience; while at all able to support its load, and continue the journey, it strains every nerve to proceed; it neither flags nor relaxes, until absolutely worn out, when it falls, to rise no more; thus rendering its last breath on the very spot it ceases to be useful. The camel is occasionally employed in the plough and other agricultural pursuits, like oxen or horses; and in many Tartar countries, it is used to draw the coaches of the kings or princes; but physiologists remark that when used in the yoke or harness, the elevation of its shoulders is cause of a waste of strength; beside, for the purpose of traction, it can only be used at all upon flat ground, its fleshy feet, which are two in number, and not externally separated, not permitting it to ascend hills, and draw a carriage after it. It is as a beast of burden that the camel is chiefly valuable; and its qualities in this capacity are improved to a great extent, by the mode in which it is trained. At the earliest period, the legs are folded under the body, in which position it is constrained to remain. Its back is covered with a carpet, weighed down with a quantity of stones, gradually augmented; it receives a scanty portion of food; it is rarely supplied with water; and in this manner is brought to endure privation. When the time of trial has elapsed, and it is broke into subservience, it kneels at the command of the master, who either mounts it himself, or loads it with a heavy burden; and then trusting to its strength, and the privations it can suffer, he ventures to traverse the trackless desert. When it lies down to receive its load, it rests upon the callosities of its breasts and limbs. It is ridden upon, loaded or unloaded, either with or without the pack-saddle; if without, the rider rides behind the hump, using no manner of bridle, guiding the beast only by striking gently with a stick on his neck. The saddle, when used, is placed upon the withers, in front of the hump, and the legs of the rider, when mounted, rest upon the animal's neck; when razzias are made, two men are mounted on each. In rising from its crouching posture, the camel, which is in general so deliberate in all its actions, mounts on its hind legs first very briskly, as soon as the rider leans on his saddle to spring up, and throws him first forward and then backward; and it is not until the fourth motion, when the beast is entirely on its legs, that the rider can find his balance. The camel signifies that it is sufficiently loaded either by a hiss or a shake of the head: it will refuse to rise if laden with even half a pound beyond its exact burden. A drove of camels will all rise or lie down, at the word of command, as if struck by the same blow. They are made to eat in a circle, all kneeling down, head to head, and eye to eye. Within this circle of heads is thrown the fodder; each camel claims its portion, eating that directly opposite to its head.

Travel.—The progress of the camel is in general slow, especially when collected in numbers to compose a caravan; but its pace is regular and uni-

form, and constitutes no inaccurate measurement of distance over desolate regions, where there is no guide. It does not appear that the load of the camel materially affects its progress; the chief difference, in that case, lying in the daily duration of its march. The camels are tied one after another, held together by strings in their nose, and are not allowed to graze during the march. This is an advantage; for much time would otherwise be lost by the camels cropping herbage by the way. The files are twenty and thirty in number, and sometimes these files are double. In mountainous districts, they are untied; otherwise one camel slipping would draw another after it, and so the whole line would be thrown into confusion. The operation of piercing the nose and passing through it a piece of wood, which is to serve as a bit, is painful, and causes the animal to utter loud wails. "Slow and sure," has in no case so good an application as it has to the progress of the camel's march. It is in the desert it gives proof of its peculiar advantages; its long neck, perpendicularly erected, removes its head from the sand-waves; its eyes, which it keeps half shut, are well defended by thick eyelids largely provided with hair; the construction of its feet prevents its treading deep into the sand; its long legs enable it to pass over the same space with only half the number of steps of any other animal, and therefore with less fatigue. These advantages give it a solid and easy gait on a ground where all other animals walk with slow, short, and uncertain steps. In fact, it is only in mounting or descending, or upon a wet and marshy soil, that it becomes unsteady and unwieldy. Sometimes, when there are many camels travelling together, the drivers beat drums, and attach small bells to the knees of the leading camels, and if it becomes necessary to quicken their pace, the Arabs strike up a kind of song which has the effect of cheering the whole party, and urging them forward.

Foal, Longevity.—Though the camel produces but one at a time, or rarely two, the care which is observed in their multiplication renders them numerous. A caravan will exhibit a thousand, nay, four or five thousand collected together, and a single individual will be the master of four or five hundred. The Dey of Tunis, singly, owns thirty thousand. The period of gestation brings no rest to the camel; the female is delivered by the way, at a halt in the desert; the foal may be seen stretched on the ground as if lifeless, the mother standing over and looking at it. But the foal does not remain so long; for in one or two days it will be up on its legs; in four or five days it will be able to run after its dam a part of a day's march; and in seven or eight days it will be able to continue a whole day's journey. The cry of the foal is very much like that of a child; in marching it is tied upon its mother's back; it remains with its mother and sucks a whole year; it sucks its mother within four hours after its birth. The mother sometimes makes a great noise over her young one. The foal frolics in awkward antics a few days after its birth, but apparently soon loses its infant mirth. The she-camels have a foal every other year, but some few every year. It is five years before the camel attains maturity. The training of the foal commences when about a year old; when first laden with light weights, it will cry, groan, grumble most piteously, and run off like mad, trying to throw off the load. The camel lives between forty and fifty years, but it is not unlikely that the duration of its life depends upon the treatment it receives.

Varieties.—Notwithstanding our familiarity with the camel, the different species and varieties are by no means well understood; which produces some inconsistency in the accounts of the properties which it possesses. There

are two species so distinct, however, that they can not possibly be mistaken; the one, the Bactrian camel, having two humps on its back; the other, of somewhat smaller size, called the Arabian camel. The hump, which is of a fleshy or glandular consistence, but not produced by a curvature of the spine, is a prominent character of the whole race.

Bactrian Camel.—This variety is characterized by two humps—one on the rump and another above the shoulders. It is larger, stouter, longer of body and shorter of limb than the Arabian camel. It is able to carry one thousand pounds, and is even sometimes made to carry fifteen hundred pounds for short journeys, or to escape the tribute which is levied upon single burdens; an object which is attained by putting the loads of two or three camels upon one, when about to enter towns where tribute is collected. The usual burden in long expeditions is from five hundred to eight hundred pounds, so disposed that half the weight hangs on each side. Yet under such a heavy load, if care be taken to feed the animal in proportion to the fatigue to be supported, it is afterward sustained on an inconsiderable quantity of beans, or a few balls of barley-meal daily, thrown on the ground when it halts. Whole days, however, may elapse without the animal tasting either food or water. Travellers frequently speak of having experienced this in long marches. Laden with eight hundred weight, it can travel forty miles a day. It often happens that travellers do not give themselves the trouble to dismount at night in order to sleep. When a caravan has reached a fat pasture, the camels disperse themselves this way and that and begin to graze, while the travellers, astride between their humps, are sleeping as soundly as if they were in their beds. A single driver will conduct a number of these camels, tied one to the tail of the other. It is stated that this animal can not swim, and that it has such a terror of water as to make it sometimes impossible to get it into a boat; with a raft there is less difficulty.* This animal abounds in northern, central, and eastern Asia. It was introduced by the Grand Duke Leopold into Tuscany, where it continues to breed in the maremmas of the Pisan territory. Immense numbers of these animals are bred in the Tell of Algeria, a region of country which includes the tablelands adjacent to the Mediterranean, and the gentle slopes of the lesser Atlas. In parts of this region snow falls every year, and lies on the ground several weeks. In Algeria, the price of a camel of this variety ranges from eighteen to thirty dollars. In the city of Algiers, the trade in camels is chiefly in the hands of the Mozabis, a resident tribe.

Arabian Camel.—This variety has only a single hump on its back. It is of smaller size, less hairy, and still more enduring than the Bactrian camel. In the rutting season, it is subject to fits of rage and violence, and it is necessary to muffle it. In the same season, a species of bladder hangs from its mouth, out of which issues a quantity of foam. These animals often fight among themselves, and their hostility affords great amusement to the Moors and Turks. The Arabian camel is able to carry, for long journeys, from three to six hundred pounds. It is supposed the hump serves for its nourishment, as it disappears in the days of starvation and hunger. It makes about two thousand two hundred of its double steps in an hour. This double step covers about five feet and a half of our measure. It will march eight hundred miles in three hundred and twenty-two hours, which is at the rate of two miles and a half

* This terror of water is occasioned by want of familiarity with it as a resisting element, and under the same circumstances is observable in a horse, which has no greater structural ability for swimming than the camel.

per hour. It never stumbles or falls. There is no necessity either to beat or direct it. Its pace is slow, but it makes long strides, and will march fifteen or sixteen hours at a stretch. It carries the women and children of the Arabs in panniers adjusted on either side. Its pace is very steady, and the traveller may sleep, eat and drink, read and write, on its back. By spreading his bed-clothes on the saddle, he will be enabled to change his posture, and to rest himself so as to avoid the direct force of the sun's rays. As the animal walks with long and regular steps, the rider feels the motion no otherwise than if he were rocked in a cradle. When travellers on horseback are weary and faint, from the fatigue of riding and the excessive heat, the rider of the camel will find himself as little exhausted as if he had ridden all day in a chaise. The saddle is always open above, that it may not hurt the hump of the animal. Denham describes it as swimming rivers, with its head fastened to a raft. The female is more valuable than the male, as it contributes more, by its milk, to the sustenance of the tribes. The Arabian camel has spread from Arabia all over the northern parts of Africa, and has long been essential to the commerce of those dry and desert regions.

Dromedary.—This animal is a sub-variety of the Arabian camel, to which it stands in the same relation that a thorough-bred racer does to a cart-horse. The hump is without fat, and very small, and its whole shape exhibits an appearance of strength and spirit. Its habitual pace is a trot, which it is able to sustain the whole day at about the same speed as the ordinary trot of a horse; but over rough or slippery ground the rate of speed is much reduced. The saddle is like a horse's, and covers the hump. The dromedary is managed by a bridle, which is usually fastened to a ring fixed in its nostrils. It is unquestionable that this animal can travel one hundred and even two hundred miles in twenty-four hours. Like the camel, it kneels to receive its load or a rider on its back. At a certain signal, it droops its head and neck, so that one can alight and remount, whenever there is occasion, without making the animal stop. When once fixed in the saddle, the rider has only to give way to the motion of the beast, and he soon finds that it is impossible to be more pleasantly mounted for a long journey; especially as no attention is requisite to guide the animal, except in turning it out of its straight-forward direction, which very seldom happens in the desert, and in a caravan. Its pace is light, the opening angle of its long legs, and the flexible spring of its lean foot, rendering its trot easier than that of any horse, and at the same time full as swift. The sand is truly its element, for as soon as it quits it, and touches the mud, it can hardly keep upon its feet, and its repeated trips alarm the rider for the safety of himself and baggage. The young dromedary is born blind, and continues so for about ten days. The dromedary is found in Arabia, in the great African desert, and in all the Barbary States; but it is chiefly in the Eastern Sahara that it abounds. Mounted on his dromedary, dressed out fantastically in various and many-colored harness, with his sword slung on his back, dagger under the left arm and lance in his right hand, the Touarghee warrior sallies forth to war. A very fine dromedary is six and a half feet in height. The price of this animal is from ten to two hundred times that of the ordinary camel.

Military uses.—In Northern India, the English use camels for the transportation of munitions of war. A corps of mounted dromedaries is also employed. In Algeria, field-pieces are carried by camels; the battery devised for artillery-service in the desert is a model of its kind; guns, caissons, and carriages, are folded up in the most compact form, ready to be fastened on the backs of these animals. Sick men, in their beds, are carried by camels.

The *ambulance* used by the French army in Africa, is a most ingenious contrivance. This *ambulance*, called *cacolet*, is a species of pack-saddle, made of wood and iron, and adapted for the backs of camels. The *cacolet* has on each side two iron chairs, which fold up within a very small compass; so that a camel may depart with a column, carrying boxes of biscuits, barrels of meat, flour, and other provisions, and may bring back sick or wounded soldiers, to whom these chairs afford a safe and commodious conveyance. It is necessary that the men should be seated so that they may as nearly as possible counterbalance each other's weight. Some of these iron chairs are made to spread out at sufficient length to enable a sick or wounded soldier to lie down. Camel-caravans will be unapproachable by mounted Indians, as the camel, when first seen by horses, inspires uncontrollable terror.

Acclimation.—The natural abode of the camel is in regions abounding with sand or gravel, where food is scanty, and exposure to long-protracted privations unavoidable; and as deserts exist in cold as well as warm climates, so does the camel. Like man, it adapts itself to every clime, nature enabling it to endure with equal fortitude the extremes of heat and cold. Widely as it is now dispersed over Asia and Northern Africa, there is historical evidence to show that there was a period when it was a stranger even in Africa, and when its sphere in Asia was comparatively limited. Now, its geographical diffusion is equal to that of most other domesticated animals; it is not, however, found wild, as are other domesticated animals. It has followed the radiations of war, commerce, and emigration, over a stupendous segment of the earth's surface, stretching across the whole of Asia, and extending as far north as Lake Baikal in Siberia, in the sub-polar climate comprehended between latitudes 56° and 58°. It is much used in Eastern Europe. In Africa, it resignedly plods its weary way across its entire breadth, and from the shores of the Mediterranean to the region of the tropical rains. These facts demonstrate that the camel is easily acclimated, and that its *habitat* is not limited by climate, but by the nature of the soil, which must be suited to the peculiar configuration of its foot.

American Camel-Region.—Recent explorations demonstrate that the high table-lands of Texas, New-Mexico, Utah, Sonora, Chihuahua, Durango, and portions of Central Mexico, are fitted for camel-travel; for over those lands the varieties of the cactus abound, and the soil is gravelly and sandy; the climate being at the same time isothermal with that of the Tell of Algeria.

MANURE FOR ROSES.

THOMAS RIVERS, in his last rose-catalogue, says that for a neat surface-dressing for autumnal roses, to be applied late in spring, wood-ashes and guano have proved most excellent fertilizers, in the proportion of half a peck of guano to a bushel of ashes, applying two quarts of the mixture to each tree, in a circle eighteen inches in diameter round the stem, and suffering it to remain undisturbed upon the surface. The ashes retain the moisture from the dew and showers, and the effect, in giving a vigorous growth, with an abundant crop of the flowers in the autumn, has been very apparent. In our dryer climate, an occasional copious watering, or a thin grass mulching, placed over this compound, would doubtless be of decided benefit, and during dry periods would in fact be indispensable.

REMEDY FOR THE CURCULIO.

DIVERSE prescriptions are given for the cure of the various diseases of the human species, and those for vegetable growths are equally numerous. The curculio has proved utterly unmanageable in most cases, but we find recently that many have been successful in getting rid of the pest. Among others, our excellent and judicious friend, Mr. Bacon, has given us one mode of defense, which has stood the test of experience. We cut the following, which seems somewhat akin to his method, from an exchange, and regard this form of obtaining security from its ravages the same thing in principle, and well worth the trial. The writer says:

"I have in my yard two plum trees, which have blossomed well every spring for more than ten years past, and have been literally loaded with young fruit; but one solitary plum escaped the ravages of the curculio long enough to mature, until last summer, when one of the trees produced a fair crop. These trees stand about ten rods asunder; and their circumstances, as to soil, exposure, and situation in reference to other trees, are as nearly alike as may be. During the past ten years I have tried every thing—except '*catching the critter*'—which I have seen recommended in agricultural works for repelling the curculio, but found nothing effectual until last season. I yarded my pigs in a small space about them for several weeks, to no good purpose. They were dusted with lime and ashes every morning for a long time, without success. Holes bored into the body of the tree, and filled with sulphur, and stopped with a plug, had no perceptible influence. Many other remedies proved quite as ineffectual.

But last spring, early in May, in grading my yard around one of these trees, to the depth of ten or twelve inches, coarse unfriable earth from the highway-side was drawn in with a scraper, and the team in travelling over it, packed it down very firmly. I had resolved, that if I found no fruit this year, I would cut them down. The result was, that the tree which had dirt hauled about it, yielded a fair crop of ripe fruit; while from the other one, although it was well filled with young fruit, every plum dropped before they were half grown. I observed when the curculio was committing depredations, and the fruit was dropping daily, that from the tree around which dirt had been drawn, but very few plums fell to the ground in consequence of having been stung.

It would appear from the fact that the curculio itinerates but little, that it hibernates in the soil, under the branches of the trees on which it has flourished the preceding summer; and that paving, or burying it in the soil, a few inches deeper than it is accustomed to burrow, delays its resurrection until the young fruit has grown so as not be injured by these little marauders.

I design to make some experiments this season in repelling the curculio; and if I am successful, I will furnish you with details respecting them, and the result.

S. EDWARDS TODD."

Lake-Bridge, Tompkins County, N. Y.

Similar experiments to the above have come under our own observation, but no covering of the surface of the ground has yet proved entirely effectual. Mr. Manice, of Long-Island, paved the ground under his plum-trees, but did not entirely succeed in keeping out the depredators till he entirely surrounded them with a high board-fence. Against this the curculios would strike in great numbers while attempting to reach the trees.—*American Agriculturist.*

CULTIVATING STRAWBERRIES.

ABOUT a year ago, we found in the *Friends' Review*, of Philadelphia, the following note from a correspondent in Baltimore, (we believe,) who had been exceedingly successful in cultivating the strawberry, giving the mode by which this success was attained. We have no doubt it is all he represents it to be.

—*Germantown Telegraph*.

"Those who know any thing about the magnificent strawberries, and the immense quantity of them raised in a bed thirty feet by forty, for several years past, in the garden owned by me in King street, may like to know the process by which I cultivate them. I applied about once a week, for three times, commencing when the green leaves first began to start, and making the last application just before the plants were in full bloom, the following preparation: Of nitrate of potash, of glauber-salts, and sal soda, each one pound; of nitrate of ammonia, one quarter of a pound—dissolving in thirty gallons of rain or river water. One third was applied at a time, and when the weather was dry, I applied clean, soft water between the times of using the preparation, as the growth of the young leaves is so rapid that, unless well supplied with water, the sun will scorch them. I used a common watering-pot, and made the application toward evening. Managed in this way, there is never any necessity of digging over the bed, or setting it out anew. Beds of ten years old are not only as good, but better, than those two or three years old. But you must be sure and keep the weeds out."

VARIETIES OF THE CURRANT.

Among the smaller fruits, the currant is entitled to preëminence for its intrinsic usefulness. It will grow on almost any soil, bears without fail every year, and yields a large crop. It is little subject to casualties, and requires but little attention in cultivation. It is a palatable and wholesome fruit, which comes at a season when others are comparatively scarce, and continues a long time. Its value for jellies is known to every housewife. The black currant possesses a value for the production of a medicinal wine, which is not appreciated. A gentleman in this State formerly made considerable quantities, which were exported to the Southern cities and the West-India islands, where it was much esteemed for its efficacy in the prevention and cure of summer complaints.

Viewed in reference to all its good qualities, the currant is not generally so highly prized as it ought to be. A late number of the *Horticulturist* contains an article by John Saul, of Washington, D. C., which comprises much valuable information in regard to this fruit, especially relating to the characteristics of varieties. We copy the following from Mr. Saul's communication:

1. *Champagne*.—In foliage, wood, and habit, this belongs to the red class. Color, delicate rosy-pink, and would appear like a cross between a red and white, from the color of the fruit; but wood, foliage, and growth, set it down at once among the reds. This variety is scarce in England. The bunches are small, yet it is much in demand, where known, for preserving.

2. *Red Dutch*.—"Bunches short. This is a sweet, rich, and good currant." Thus it has been described by Mr. Rivers, in the last edition of his catalogue. When we consider the many good qualities of the Red Dutch, it is a free grower, a good bearer, a fair-sized bunch, with large, high-colored, rich berries; and above all, for jams and jellies it has no superior, if it has an equal. It is one of the best red currants.

3. *Red Dutch, Long-Bunched*.—This is a fine, long-bunched, large-berried variety of the above. It is later, and rather more acid.

4. *Red Grape*.—A very fine long-bunched variety, with large berries, but very acid.

5. *Knight's Early-Red*.—Bunches and berries about medium size, moderately sweet. A very good early currant.

6. *Knight's Large-Red*.—Bunches long, berries large, medium season. A fine, large currant, but inclined to be acid.

7. *Knight's Sweet-Red*.—A really good, sweet, red currant, with long bunches and large berries.

8. *Palmer's Large-Red*.—In this we have a very fine, long-bunched, large-berried currant; a vigorous grower and an abundant bearer. It is extensively cultivated in some localities in England.

9. *Pitmaston Sweet-Red*.—Bunches short, with berries below medium size. This is the sweetest of all the red currants. Raised by Mr. Williams, of Pitmaston.

10. *Victoria, Ruby, or Houghton-Cattle*.—The bunches are longer than any other variety. A free grower and an abundant bearer. Perhaps, on the whole, the finest red currant known.

11. *Red Striped-leaved*.—A poorly-variegated variety of a bad red currant. Unworthy of culture, either for its foliage or fruit.

12. *Black Bang-up*.—A good variety of black. Bunch and berry nearly if not quite as large as Black Naples.

13. *Black Naples*.—Considered the best of the black currants, and I think deservedly so. Bunches of fair length, berries large.

14. *New Dwarf-Black*.—This variety promises well. It is of more dwarf habit than the other blacks, and in bunch and berry equal to Black Naples.

15. *Green-fruited Black*.—Wood, foliage, and growth is that of the black, while the fruit when ripe is green. In flavor it will not approach the other blacks. It is a most singular variety, but is worthless as a fruit-bearer.

16. *Variegated-leaved Black*.—Here again we have a badly-variegated foliage, and a poor fruit. Not worth cultivating.

17. *Old White*.—This variety now is seldom met with, the larger varieties having taken its place. The bunches are short; berries small, amber-colored, or nearly so, and of higher flavor than any of the other whites. This should be borne in mind by the raisers of new varieties.

18. *White Dutch*.—Bunches of fair length; berries large, deep in color, and of high flavor. This is a very fine variety; every point considered, perhaps the finest of the white currants.

19. *White Grape*.—Bunches long; berries large, pale, not quite as high-flavored as the White Dutch. As a general rule, the closer a white currant approaches in color to amber, the sweeter and richer in flavor it is, like a finely-ripened Muscat grape.

Some of the finest currants I have ever seen grown were in the Isle of Wight. In Guernsey and Jersey they grow equally fine, more particularly the reds and whites. The soil was a strong, adhesive loam, resting on clay, but a well-drained bottom. The climate is very genial, and the fruit is not only

large and well-colored, but finely ripened. In the market-gardens about London they are excellently grown, and managed somewhat in this way. They are planted in lines, at given distances apart—say twenty or thirty feet row from row, and three or four feet apart in the rows. The ground, which is naturally good, is highly manured, and cropped between the vegetables. The plants, after the first year or two—when they commence bearing—are pruned very hard. Perhaps it will be better understood what I mean by hard, when I say the greater part of the young wood is thinned out, and what is allowed to remain is shortened back to two or three inches. By this means the trees are always kept short, never attaining a greater height than two or three feet. The bushes being low, with well-thinned-out and shortened branches, they shade little or none of the ground, and are cropped up to the bush. These strong-manured and well-pruned trees produce magnificent fruit, and in great abundance, well remunerating the market-gardener for his trouble.

What will the advocates of no-pruning say to this? Yet the currant, like the foreign grape, must be pruned, and pruned severely, if fine fruit is wanted. The black currant will not submit to this treatment, bearing as it does on the young wood. The latter must be thinned out, and when over-long, moderately shortened. The pruning must be varied to suit the age and vigor of the tree.

There are many soils in which the white currant will not grow—ground to all appearance of the best description, and in which the other currants grow finely; yet in these soils white currants will scarcely live—grow they will not; showing there is something wanting in the soil necessary for the well-being of the plant. Perhaps chemistry could step in to our aid, and tell us what this essential is. Again we meet with soils where the whites vie in vigor with the reds—ground which may be to appearance no better than the other. In a general way, it is more particular to soil than either reds or blacks, which will grow in almost any.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

MR. SANSOM'S INQUIRY: GRAIN-DRILLS.

MESSRS. EDITORS: Your Texas correspondent, Mr. Sansom, wishes to know something in relation to cultivating wheat, and the best implement for drilling it in. There are several modes of cultivation, and several different kinds of grain-drills, and the most of them answer a very good purpose, if the ground is in the right condition to use them. In this region of country, where we have a weedy, soddy, and tough piece of ground, we usually summer-fallow it, ploughing it three times during the season, and thus we fit it for the drill. The seeds decay, the soil becomes mellow and lively, and in a word, is put in the right state to receive the seed. Mr. Sansom's account of the prairie-soil in Texas, would indicate that the prairies are all swarded over, etc. Very well; plough deep, and see to it that your soil is thoroughly pulverized, and there is not the least reason to doubt that grain-drills can be most effectually worked in your country. There being no stones, no roots, or other obstructions to bother you, you can use our York-State drills profitably and beneficially. We have used the drill for some time past, not only

in sowing wheat, but in sowing oats, barley, etc. In all cases it works most admirably. I don't know as it would be worth while to go into a lengthy account of the advantages of the grain-drill, but it is sufficient to state that if you have much grain to sow, get a grain-drill. There are those which can be procured that will do good service. We use the *nine-tooth* drill, manufactured at Palmyra, Wayne County, N. Y., by Foster, Jessup & Co. One drill cost us, delivered on the spot, ready for use, \$70. It is a good, durable instrument, and can be shipped to almost any part of the United States at a trifling expense. Lemone's drill is said to be good, but I never have used it. I know that the Jessup drill does good work, and by changing your horses, using one team in the forenoon and a fresh one in the afternoon, you can drill in *fifteen* acres in a day, and do your work well.

By using the grain-drill, you *first* save seed; *second*, your grain is put into the ground at an equal depth, and hence does not fail to germinate; *third*, the sun's rays are admitted between the rows where your grain is drilled in, north and south; *fourth*, your grain grows uniformly of one height, the heads all being about of one size and one appearance; and *fifth*, the drill answers the purpose of a drag or harrow, working the soil over to better advantage than even the drag. One man can use the drill, but the help of two men is better, on account of expediting the work and keeping the instrument regularly adjusted.

As people become acquainted with the grain-drill, more and more, they seem to fall in with it, because it combines so many advantages superior to those gained by sowing grain broad-cast. Wheat sown with a good drill, is not near as liable to heave out as that sown broad-cast. It becomes deeply rooted, and therefore remains firmly in the ground. I should advise Mr. Sansom by all means to get a grain-drill to use on the prairie-lands of Texas, and in my opinion he will never regret it.

Very respectfully,

W. TAPPAN.

Baldwinsville, N. Y.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

ROTATION OF CROPS: OAT-HUSBANDRY.

MESSRS. EDITORS: Permit me to renew my communication, by offering something on our rotation of crops and oat-husbandry. Changing our lands has only within a few years attracted our attention.

In establishing this system, it is generally admitted that the product grown should be as dissimilar as possible from its predecessor. Cotton is entirely distinct from any thing we produce, so that we have no difficulty in having it succeed either corn, oats, or potatoes. Neither is there any hindrance in realizing a good yield on our fallow-land.

If we omit growing oats, there is no obstacle to carrying it out. Then we have as a rotation, corn, pasture, cotton. Part of the land that has been occupied by cotton the preceding year, can that year be planted in the same, as cotton appears to exhaust or tier land much less than any of the above.

When we grow a full oat-crop, the difficulty becomes greater and very embarrassing. From the similarity between oats and corn, they do not do so well to succeed each other, especially corn after oats. One great objection is, our stand of corn may be materially injured by the ravages of a small worm,

that preys on it when small, in the root. The objections to oats following corn are, our land becomes too close and waxy, from stock being permitted to run on it during a portion of the winter, especially if wet. It also may be foul; if so, it breaks up badly. Both belonging to the family of cereals, the similarity certainly does no good. But I believe it is the best we can do. Cotton answers as a predecessor most admirably. Corn being with us the most important crop, claims precedence here.

I have been trying a course, but the result, I apprehend, will not be satisfactory, of corn, fallow, oats, cotton. Potatoes do best after cotton, where this crop is admissible. Oats, to precede potatoes, will answer well, if we do not, after gathering, feed too close. About the latter part of June put in a crop of peas, and, in addition, after the peas are consumed, we can have a good oat-pasture, if we will take off our hogs by the 1st of October.

Our oat-crop is annually becoming more important, especially if we wish to be sure of our meat. The principal oat grown by us is the Egyptian. It is our heaviest. After cutting and pasturing, if the stock is taken off in September, they spring up, affording excellent winter-grazing for sheep. They are not easily injured by the cold. Our average yield is about 25 bushels per acre; they frequently weigh 35 lbs. to the bushel. They should be ploughed in between the 1st of December and middle of January. After this time, in sowing, they are not so good; if earlier, they are very apt to interfere much more with our other crops, as they will require cutting by the latter part of May. We sow about a bushel to the acre. More interferes with their full development, causing them to prove light and dwarfish. Many good planters sow them when they last plough or sweep their cotton. My own experience is not satisfactory. I think they are more vulnerable to the cold, and it interferes with my corn-crop.

This oat has a peculiarity, I believe, not found with any other. Its natural germinating period is about the 1st of October. It may be ploughed in, in the summer, but it will hardly show itself before this time. It will, further, remain in the ground, and if the circumstances do not suit, it will not show itself for a year or two, and then will vegetate.

In my next, I shall show how we are engaged in preparing for a crop.

Yours, etc.,

H. W. STACKHOUSE.

Line Store, Hind County, Miss.

FRUITS—APPROVED LIST.

THE following list of fruits was adopted by the American Pomological Society, as worthy of general cultivation:

Apples.—American Summer Pearmain, Baldwin, Bullock's Pippin, Danvers' Winter Sweet, Early Harvest, Early Strawberry, Fall Pippin, Fameuse, Gravenstein, Hubbardston Nonesuch, large Yellow Bough, Lady Apple, Porter, Red Astrachan, Rhode-Island Greening, Roxbury Russet, Summer Rose, Swaar, Vandervere, White Seek-no-Further, Wine Apple, or Hays; Winesap. For particular localities: Canada Red, Esopus Spitzenburg, Newtown Pippin, Northern Spy, Yellow Belle Fleur.

Pears.—Ananas d'Ete, Andrews, Belle Lucrative, or Fondante d'Automne; Beurre d'Anjou, Beurre d'Aremberg, Beurre Bosc, Bloodgood, Buffum, Dearborn's Seedling, Doyenne d'Ete, Flemish Beauty, Fulton, Golden Beurre of Bilboa, Louise Bonne de Jersey, Madeleine, Paradise d'Automne, Rostiezer,

Seckel, Tyson, Urbaniste, Uvedale's St. Germain, for baking; Vicar of Winkfield, Williams' Boncretien, or Bartlett; Winter Nelis. For particular localities: Grey Doyenne, White Doyenne.

Apricots.—Breda, Large Early, Moorpark.

Nectarines.—Downton, Early Violet, Elruge.

Peaches.—Bergen's Yellow, Cooledge's Favorite, Crawford's Late, Early York, serrated; Early York, large; George the Fourth, Grosse Mignonne, Morris White, Old Mixon Free. For particular localities: Heath Cling.

Plums.—Bleecker's Gage, Coe's Golden Drop, Frost Gage, Green Gage, Jefferson, Lawrence's Favorite, Purple Gage, Purple Favorite, Washington. For particular localities: Imperial Gage.

Cherries.—Belle Magnifique, Black Eagle, Black Tartarian, Downer's Late, Downton, Elton, Early Richmond, for cooking; Graffion, or Bigarreau; Knight's Early Black, May Duke.

Grapes.—Under glass: Black Hamburg, Black Prince, Black Frontignan, Chasselas de Fontainebleau, Grizzly Frontignan, White Frontignan, White Muscat of Alexandria. Open culture: Catawba, Isabella.

Raspberries.—Fastolf, Franconia, Red Antwerp, Yellow Antwerp.

Strawberries.—Boston Pine, Hovey's Seedling, Jenney's Seedling, Large Early Scarlet.

Currants.—Black Naples, May's Victoria, Red Dutch, White Dutch, White Grape.

Gooseberries.—Crown Bob, Early Sulphur, Green Gage, Laurel, Red Champagne, Green Walnut, Houghton's Seedling, Ironmonger, Warrington, Woodward's White Smith.

NEW VARIETIES WHICH PROMISE WELL.

Apples.—Autumn Bough, Melon, Hawley, Mother, Northern Spy, Smoke-house.

Pears.—Brandywine, Brande's St. Germain, Beurre Giffard, Chancellor, Doyenne Boussock, Doyenne Goubault, Duchesse d'Orleans, Duchesse de Berri, Diller, Jalousie de Fontenay Vendee, Kirtland, Limon, Manning's Elizabeth, Nouveau Poiteau, Onondaga, Ott, Pratt, Paradise d'Automne, St. Michael Archange, Stevens' Genesee, Striped Madeleine, Van Assene.

Plums.—M'Laughlin, Prince's Yellow Gage, River's Favorite, St. Martin's Quetshe.

Cherries.—Bigarreau Monstreuse de Bavay, Early Purple Guigne, Reine Hortense.

Grapes.—Diana.

Raspberries.—Knevet's Giant.

Strawberries.—Burr's New Pine.

REMEDY FOR THE BITE OF A MAD DOG.—A Saxon forester named Gastell now of the venerable age of eighty-two, unwilling to take to the grave with him a secret of such import, has made public in the *Leipsic Journal*, the means which he has used for fifty years, and wherewith, he affirms, he has rescued many human beings and cattle from the fearful death of hydrophobia. Take immediately warm vinegar or tepid water, wash the wound clean therewith, and then dry it; then pour upon the wound a few drops of muriatic acid, because mineral acids destroy the poison or saliva, by which means the evil effects of the latter are neutralized.

bought a factory-village, in Holden, Mass., five miles from the city of Worcester, in the same county, where he is about to commence the fork manufacture on an extensive scale, in company with Henry F. Holmes, a gentleman of much enterprise, well known in the flour trade. He has also made arrangements with a powerful company at Millbury, in the same county, for their extensive manufacture, at the head of which is T. H. Witherby, the well-known chisel and drawing-knife manufacturer. Under such circumstances, we prophesy better tools in the hands of the agriculturist, and money in the pockets of all concerned.

For further information address the inventor, at Worcester or Holden, Mass.

PROGRESS OF MECHANICS.—No. III.

WE resume the illustration of this subject, which was commenced in our March and continued in our April number.

Among the more noticeable improvements in the arts, we may add those connected with the *manufacture of fire-arms*. The invention of gunpowder was a death-blow, comparatively, to the manufacture of armor, for no coat of mail could withstand the force of a bullet at a moderate distance, nor furnish any defense against cannon-balls. Indeed, we wonder that those iron garments could be worn at all. As we have looked upon the coats of mail now in the Crystal Palace, sent from the Tower of London—the same that were actually worn in the time of the Henrys—we wonder that they could be endured; and it seems to us that a Yankee in an ordinary dress, could knock down and trample upon a half dozen of men, encumbered with such defenses.

The first cannons were bars of iron, hooped together, but ere long, guns were cast. They were, however, of enormous size. In Turkey, at this day, they may be seen suited to carry a *stone-ball* of 600 lbs. weight. At one time, gun-barrels were covered with iron wire, the coils being furnished with a smooth surface, and soldered together. The rifle, probably a German invention, is the most effective of "small-arms," and was brought into use as early as the year 1500.

We can not speak in detail of the revolvers and breech-loading guns and pistols of modern times. These are chiefly the invention of the present generation, and the most important are the inventions of our own countrymen. To illustrate them would require numerous engravings, which are not now at our command. We shall be glad of an opportunity to present them hereafter.

The *stamping of coins* and other metallic plates was formerly done exclusively by hand. We have referred to this fact in a former number. The invention of machinery, or perhaps, more strictly, the adaptation of machinery to this purpose, has added greatly to the economy, and also to the perfection of these manufactures.

The use of iron, as a substitute for wood and other materials, is a step of very great importance in the progress of the arts. We can not do justice to this topic, in its broadest extent, and must only allude to facts which may receive more extended notice hereafter. We will attempt a little classification, as follows:

1. **IRON FOR MARBLE.**—No visitor at the Crystal Palace, or at the exhibitions at Castle-Garden, or at the Mechanic-Fairs in Boston, can have failed to notice the fire-frames, and other architectural forms, composed of iron and made to resemble marble. The resemblance is perfect. A close observation, without handling, would often fail to discover the real material.

There are two processes by which this effect is produced. One by a simple coat of some varnish-like material, and the other by the application of some matter more *granular*, so to speak; that is, something more resembling a thin coat of plaster. It is, in fact, a composition applied to the surface of the iron, and reduced to a smooth surface and then polished. As usual, both are urged as the best, and most durable, but we are not sufficiently experienced in the actual use of either to give their relative value. The former, however, is said to stand heat better than the other.

2. **IRON FOR WOOD.**—Iron ships and steamers at once loom up in the mind at the sight of this phrase. The experiment has been tried; and we have sufficient experience to prove that whether this substitution may or may not eventually be found useful for all kinds of vessels, at least it is the best for some. How many lives, sacrificed by fire in our streams the last year, might have been saved had iron formed the substance of which those steamers were built! Those beautiful life-boats in the Crystal Palace, will for ever silence all disputatious minds, as to the utility of such applications of this most useful metal.

IRON FURNITURE is already in market, and these manufactures will no doubt increase. Iron chairs are somewhat objectionable in this climate, but no doubt some expedient may be devised for surmounting this difficulty. Iron bedsteads are of unquestionable convenience,—easily managed, easily cleaned, seldom infested with animated dust, and never, we suppose, if painted with verdigris; they can not fail to come into extensive use. Iron frames for sofas, couches, *tete-à-tetes*, etc., etc., and wherever there is opportunity for a liberal use of curled hair, the use of iron must become much more common. As material for book-shelves, it is incomparable.

IRON BRIDGES are already familiarly known. That of Southwark, at London, crosses the Thames by an arched frame-work of iron that has stood more than half a century. Its largest span is 240 feet. Iron suspension-bridges, of which the most renowned is, perhaps, that below Niagara Falls, are an invention of very great importance. The possible application of iron to this kind of architecture is almost unlimited. The tubular bridge at the Straits of Menai, recently erected, shows beyond dispute, that skill and machinery are adequate to any thing in this department that money will pay for.

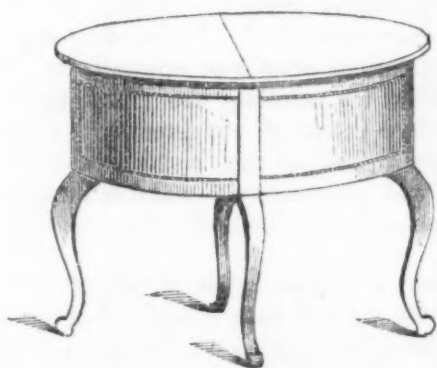
IRON CABLES have almost entirely superseded the use of those of hemp. Cast-iron for light-houses must eventually supersede all other materials for such structures, and also for the roofs of ordinary dwellings. The immense supply of the native ore, and the constantly-increasing facilities for working it, insure an immense increase in the demand for iron, for these and a score of other uses, in which it is now scarcely thought of. But these suggestions are eminently in place, in this connection, for our mechanics and artisans are already quite adequate to the production of these and other articles, so soon as the condition of the markets shall encourage their manufacture.

WORKING IN WOOD.—Wood can not be manufactured into articles of ornament, or of utility, except in the more simple forms, save in an advanced condition of civilization. This may seem contrary to the fact, at the first thought, because it is so readily worked, and by simple tools. But the reason is obvious. To make graceful forms of wood, requires refined tastes,

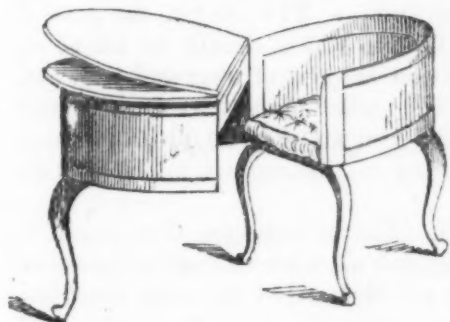
in the design, and nicely-cutting tools for the execution. Compare the wooden images of barbarous tribes with those of more educated tastes. The Swiss wood-cuttings in the Crystal Palace excel any thing to be found in the uncivilized world, and can not be exceeded in any country. We love, as we look upon them, to reverse the terms of the proposition, and to assure ourself that a people that can exhibit such chaste designs, so beautifully executed, can neither be degraded nor ignorant. Those "works" commend the Swiss to our especial regard.

NEW CENTRE-TABLE AND DESK.

Among the most convenient and desirable contrivances of the day, is a Combination Table, Writing-Desk, and Chair, recently patented, and manufactured by Messrs. Walling & Hedges,



No. 252 Ninth avenue. The accompanying cuts represent this new and convenient article of furniture in the form of a simple table, and in that of a writing-desk with its chair, combined. After the occupant is seated, the chair is hooked to the desk part, and thus a very easy arm-chair is formed. Underneath the desk is a drawer. The whole is on castors, enabling the person occupying it to move about the room without rising. When it is in the form of a table, there is considerable space to store articles of clothing or books. It is a most desirable article of furniture, well adapted to offices, sitting-rooms, parlors, and schools. Made in a cheap and durable form, we think they would be an acquisition to schools.



Messrs. W. & H. have found their desk and table to meet with a demand beyond their ability to supply. Orders have been already received from distant parts of the country.

IRON MANUFACTURES.

WE have long been surprised at the supineness of our capitalists in regard to this vast and important branch of domestic industry. No single State in the Union presents greater facilities for the manufacture of iron than Kentucky. Immediately contiguous to the many immense coal-fields now being opened in various portions of the State, are inexhaustible bodies of rich iron ore. In many of these localities, all the other materials requisite for the manufacture of iron are within convenient reach. Nothing is wanting but the erection of fur-

naces and the application of labor to produce an article for which the demand has already increased to an almost incredible extent, and is still increasing daily. A few years ago it was considered difficult, without the aid of a protective tariff, for the iron manufactures of this country to compete with the furnaces of England. It was not because iron could not be produced as cheaply here, even at that time, as in England, for here all the materials for its production, except labor, could be procured more cheaply than anywhere else; but the demand then was limited, and it was in the power of the English manufacturers to supply all that was needed, while their immense capital enabled them not only to raise and depress prices as circumstances required, to break down competition, but also to sell upon such terms as to offer inducements to railroads that could not be afforded by the smaller operators in this country.

Now, however, the times are changed. The demand for manufactured iron has become so vast that foreign competition need no longer deter our capitalists from engaging in this very profitable pursuit. During the last few years, the uses of iron have been greatly multiplied. In building ocean steamers, houses, machinery, and all the various articles of domestic use in which iron has lately been introduced, when we calculate the grand aggregate of its application throughout the whole extent of our great and growing country, it seems marvellous indeed. Taking into consideration the single item of railroad iron, the present and prospective demand is far, very far, beyond the capacity of all the furnaces in England, Norway, and the United States, to supply in many years.

There are now in operation in this country 13,000 miles of railroad. It has been estimated that by January, 1860, we will have completed of roads already constructed and projected, 30,000 miles, making 17,000 miles to be furnished with iron in less than six years. The rails for these roads will consume at least 100 tons of iron per mile, giving 1,700,000 tons of rails required to be furnished by January, 1860. This amount, at \$75 per ton, the present price of railroad iron, will cost \$127,000,000, to which should be added at least \$10,000,000 for repairs and renewals on account of wear and tear, and probably \$40,000,000 for locomotives and other necessities for railroads which require the use of iron—making an aggregate of \$180,000,000 manufactured iron required for railroad purposes in this country in the next six years.


These railroads must and will be built. The advantages of railroads in promoting the agricultural, manufacturing, and all other industrial interests, have become so apparent that railroads are demanded in every direction. The cost of their construction is amply and many-fold repaid in the increased value of adjacent lands and their products. The means to build them will be forthcoming at the proper time, and the materials for their construction must be procured. For years past we have been paying tribute to foreign iron manufacturers. Since the introduction of the railroad system in the United States, we have doubtless contributed to foreign producers not less than \$100,000,000 for railroad iron alone. It is time that we should cease to depend upon England for this commodity, and expend among our own operatives this immense bonus thus paid to foreign labor.

It has been suggested that a certain number of railroad companies should form a combination, and proceed to manufacture their own iron. We have no doubt that this arrangement, if actively engaged in, would enable the parties to procure all their iron in a shorter time, and at far less expense, than by any other method. It would be the means of building up in our midst

an iron manufacture which would render us altogether independent of foreign aid and exempt from foreign extortions. We hope to see this done. We are satisfied that no section of the country can present greater advantages for the location of such a work than many parts of Kentucky; and we believe that if capitalists would turn their attention to iron manufactures in this State with the same eagerness that has been evinced in the improvement of our coal-fields, a source of profit would thus be opened to them greatly surpassing any other investment. In a national point of view, every possible effort should be made to retain among our own laborers and mechanics the vast sum to be expended for manufactured iron.—*Louisville Journal*.

EDITORS' JOTTINGS AND MECHANICAL RECORD.

GENERAL AGENCY.—The publisher of *The Plough, the Loom, and the Anvil*, believing it in his power to be of essential service to the readers of that journal in the purchase or sale of various articles, and the transaction of various kinds of business, would announce to them that he is ready to execute any such commission which he may receive, including the purchase of books of any description, implements connected with agricultural, manufacturing, or mechanical operations; artificial manures; farm and garden-seeds, etc., etc. One of the gentlemen connected with the journal is a proficient in music, and experienced in the selection of piano-fortes, flutes, etc., and will execute orders in that department. He will also act as agent in the purchase and sale of Real Estate.

 Particular attention to business connected with the Patent Office.

Letters of inquiry on these matters will be promptly attended to.

COLLECTORS WANTED, in all the States south and west of Ohio and Pennsylvania. Those of experience preferred, and unquestionable references required. Address, post-paid, or in person, at this Office.

PROPERTIES OF IRON.—In the concluding lecture of Professor Smith, at the Smithsonian Institution, the lecturer dwelt upon the tendency of iron to undergo a change from a fibrous to a granular condition—thus causing the abstraction of an indefinite amount of its tenacity and strength. Fibrous iron, by being for a considerable time subjected to concussion, will become granular and therefore weak. A knowledge of this principle has induced the French government to disallow the use of iron axles on their public *diligences* beyond a certain time; they must then be removed. Iron cannon, originally very strong, become weaker and weaker by use, from the loosening of the texture of their substance.

THE NEW PROCESS OF MAKING BREAD.—A baker at Lyons has made a discovery in the art of making bread, which must be very useful in these days of high-priced breadstuffs. From a bag of flour weighing 314 pounds, the Paris bakers make about 400 pounds of bread; by the newly-discovered method, the baker of Lyons makes 440 pounds of bread. Several gentlemen of the Academy of Science have examined the process, which is thought to promise very favorably, though we do not see how the nutritive qualities of a certain bulk of wheat are to be increased by increasing the weight.

This is from the *Maine Farmer*. In speaking of this subject, the *Puritan Recorder* says:

"The bread made is every way as good as that made by the old process. The addition comes from the use of some fermentative material which causes more water to combine with the flour. *Yet this would not show that there is not a gain of solid and nutritive materials.* The case may be illustrated by the slacking of lime; which adds many times the bulk and weight of the original body, through the water passing from a fluid to a solid form in the new com-

bination. We see no impossibility, therefore, on the face of the thing. If it proves to be all that the late experiments seem to show it to be, and thus to add fifty per cent to the amount of bread from a given amount of flour, it will be found to be no unimportant discovery."

It seems from this paragraph that some of our editors, or one, at least, believes in a new system of chemistry, by which new substances are formed out of nothing; or he takes on faith, what can not fail to be an arrant humbug, or something worse. More than one expedient is in common use already, for making *bread weigh*; and if respectable journals are disposed to give to such efforts the reputation of honesty, all we can say is, *God help the poor!* They get quite too little now, from many bakers, but their prospects will become still darker. Let every honest man expose this new machinery for swindling, as "no unimportant discovery," but in a sense entirely the opposite of that intended by the writer of the above paragraph. The italics are ours, and were not in the original."

The illustration of water added to lime, is in point, but goes against the doctrine of the editor. *The quantity of lime is not increased.* It is the same in the case of flour. It may be made to absorb more water, but no nutriment is thereby added, and the result will be that the people have to pay for the water at the same rate as for bread.

COAL IN CALIFORNIA.—Coal mines of great importance have lately been discovered in portions of Oregon Territory and Puget Sound. To work one of these, a company has been formed in San Francisco, whose capital is \$200,000. Already some one hundred tons have been sent to market, and is proved to be of superior quality. The company have contracted to deliver 5500 tons within four months. This, at \$25 per ton, (less than the ruling rates, which are \$27 to \$33,) will yield them a handsome profit upon all labor expended up to the time of delivery.

GUANO DEPOSITS.—The Peruvian Government has employed a French Engineer, with several assistants and chemists, to measure the guano deposits on the Chincha Islands. The result has just been made known. It appears that the total deposits on the Chincha Islands amount to 16,501,466 tons (gross.) Beside these, Peru owns several other deposits of considerable extent which are now being surveyed. From this, it is evident that the fears which many have entertained, that the supply of guano would be exhausted, are groundless.

CENTRAL MILITARY TRACT RAILROAD OF ILLINOIS.—This road extends from Aurora, its northern terminus, to Galesburgh, on the Peoria and Oquawka road, its southern terminus, and when completed will open a really direct route from Chicago to the Mississippi River at Quincy. The country through which it passes is among the best in the State. In fact, the Military Tract is acknowledged to be the Paradise of Illinois. Among the numerous roads proposed and constructing in Illinois, this one has heretofore made but little stir in the market. But from what we can gather, its progress is steadily onward.

NEW PATENT FOR MAKING NAILS.—There has recently been invented and put into operation in this city a new machine for making cut-nails, the great peculiarity of which is, that it is self-feeding, and will manufacture in a given time nearly, if not quite, as many again nails as any other known process, and that any man, (as it is claimed) with the assistance of a boy, will operate ten machines. There is also a great saving in iron, there being only a waste of about a quarter of an inch in ten feet, which is the length of the piece of iron placed in the machine at a time. It has been shown that one machine will manufacture from three hundred to three hundred and fifty nails per minute.—*Troy Whig.*

WATER WORKS AT WATERTOWN.—Messrs. J. Ball & Co., of this City, have been constructing water-works at Watertown, N. Y., under a great head.

We are informed that the water is forced from the Black River through their pipes into a reservoir some 7000 feet from the river, and elevated about 190 feet above the pump well. *The Democratic Union* speaks of the trial as follows:

"The trial of the water-works was in the highest degree gratifying to all the friends of that noble enterprise. Several hydrants were tried, and all worked to admiration. We witnessed the one near the Arcade entrance, which threw water in a perpendicular direction to the distance of 40 feet above the buildings. The fountain threw a jet of water to the height of 80 feet. It is well to remark that the triumph of the water-works at this trial was effected without letting on the full head of water. It is estimated that under a full head, the fountain will throw its jet to the height of 110 feet. The reservoir is situated about one mile from the centre of the village, at an elevation of 190 feet above the fountain. It will contain 3,500,000 gallons. The pump by which the water is forced from the Black River to the reservoir, was constructed by Hoard and Bradford. There are sixty-five hydrants, situated at different points in the corporation. The one at the Railroad depot is said to be over 200 feet below the reservoir. We reckon there will be some spouting if that hydrant should ever be uncapped under a full head of water. Eight of these hydrants can be brought to bear, at the same time, on any of the principal buildings. Mr. Ball, the enterprising and reliable contractor for the construction of the pipes, has finally triumphed nobly, in spite of the cavillings of croakers and fault-finders. The trial was a pretty good indorsement of his bonds. All credit is due to those of our citizens who have projected, encouraged, and sustained this great enterprise."

HINDOO MECHANICS.—The Hindoos do their work in such a different manner from the American and Englishman, that he almost appears to be a person belonging to a different order of beings. Our blacksmith stands at work, the Hindoo squats with his knees nearly on a level with his chin; it is the same with their carpenters and masons; their posture is suggestive of indolence and effeminacy. They appear to be defective in the muscular power of their limbs, and the blacksmith hammers away, squatted like a kangaroo, on his haunches. They go barefoot, and if they do not use their feet to stand upon while they work, they make more use of their toes than the Anglo-Saxons. The Hindoo blacksmith, when he has a piece of iron to file, places it between the jaws of a small pair of tongs, and grasping them firmly between his great toes, files away with great force. He also sometimes uses his toes to reach forth and grasp a tool, the same as we our fingers, and so accustomed are they to use their toes, that they sometimes adorn them with gold rings, they being as worthy of such honors as our fingers.

Time does not seem to be valued by the Oriental; his tools and method of working appear to be contrived for the very purpose of consuming as much time as possible. The mason works with a trowel about the size of one of our table-spoons and a small hammer about half a pound weight.

He squats before his work, and has two women attendants to bring him his brick and mortar. These attend, the one with a brick in each hand, the other with a truncheon of mortar about the size of a breakfast-plate. One American mason, with one hod-carrier, will lay as much brick as twelve Hindoos, with their twenty-four *rundees*, or brick-and-mortar attendants.

BARNES' PATENT EXTENSION-BITS.—Such has been the success of this article, in giving satisfaction to those who have been able to get them, and such the continued demand for them from all quarters, that Mr. Barnes has been obliged to enlarge his manufactory, and will hereafter hope to supply all demands. The bit is so constructed, that three collectively make a complete set, that will bore any diameter, from $\frac{1}{4}$ to $2\frac{1}{2}$ inches—equal to 31 ordinary bits, beside cutting numerous sizes between. Indeed, it seems to be just what all workers of wood must have to make their kit of tools complete, and almost as essential as a jack-plane or hand-saw.

NEW MOTIVE POWER.—A correspondent of the *Syracuse Standard*, writing from Rochester, speaks of the discovery of a new motive power which is to subvert the present mode of steam propulsion, and a great improvement upon all former discoveries. But we must confess that to us it looks like a very doubtful case. What is the "Bi Sulphate of Carbon?" He says:

"It consists in the use of Bi Sulphate of Carbon as a motive power. An engine has been constructed which works like a charm. The expansive force of this material, as every chemist knows, is many times greater than that of steam, while at the same time it requires a much less degree of heat to vaporize it.

I will give you the result of an experiment with a miniature steam-engine. It required the constant use of eight spirit-lamps to generate steam enough from water to cause it to make one hundred and fifty revolutions per minute. Withdraw two of the lamps and all motion would cease. Withdraw all of them and keep them away *twenty minutes*, then apply the Bi Sulphate of Carbon and there was heat enough remaining to propel the engine at the rate of *one thousand times a minute*. And this will apply on a large scale just as well. This substance being so easily evaporated, heat from 20 to 160 degrees is found sufficient for all purposes. Hence there is no danger of explosions as with steam. It is confidently believed that this new motive power is destined to supersede the use of steam. The inventor has applied for letters patent.

To sum up the whole matter, the inventor claims that a locomotive on this principle can be built at a less expense than a steam locomotive; that the boiler need be only one tenth as large; the engine can be managed with less hands; a greater speed can be obtained; no danger from explosions; and a saving of fuel at the rate of *eighty per cent*. An instance of the value of this invention, if these things are all true, the New-York and Erie Railroad would save annually \$300,000 by adopting the invention."

RAILROAD TO THE PACIFIC.—For the encouragement of the extreme southern route, "not north of the town of Fulton in the State of Arkansas," to a suitable point at or near the town of El Paso, on the Rio Grande, the Legislature of Texas has granted a right of way across the public lands of the State, not exceeding 300 feet in width, along the entire length of said road, with all the timber, stone, etc., needed in its construction and support, found in the public lands, with 20 sections of land of 640 acres to the section, for every mile of said road that goes into operation, if constructed in a substantial and workmanlike manner, and according to the provisions of the act. The Governor is to advertise for bids and proposals for the construction of the road, and to make the necessary conveyances to the party or parties judged most worthy. The capital stock of the company is to be \$20,000,000, with a right of increase. The act is quite long, all the minutiae are provided for, and the matter seems taken hold of in earnest.

CRYSTAL PALACE.—The following passage occurs in a very sensible article upon the re-opening of this superb exhibition.

"The public most certainly have the utmost confidence in Barnum, and justly. He is industrious, fertile in resources, subtle in conception, skillful in planning, bold in execution, honest, temperate, and benevolent; and under his management we can hope that the Crystal Palace will be made vigorously to serve the legitimate purpose of developing art and industry," etc.

A NEW AND IMPORTANT INVENTION.—Capt. B. W. Perkins, of Worcester, has taken out a patent for a pistol-lock, a model of which has been shown to us. The simplicity of the thing renders it surprising that for so long a time the intricate and expensive arrangement of existing locks should have been used. It is constructed with only three pieces, including a small spiral spring; is extremely simple, less liable to disarrangement than those now in vogue, and can be constructed at one third of the expense. It ought to, and we hope will, make the fortune of the inventor.

A NEW SAFETY-GUARD FOR RAILROADS.—A Frenchman by the name of Verite has invented an electric clock, for the purpose of guarding against accidents to

railroad trains. The railroad on which they are used is divided into regular stations of eight or ten miles in length, which stations are in their turn subdivided into sections of a mile or less. At the end of every station are placed two dials, facing in opposite directions, the circumference of each being divided into as many spaces as there are sections in the stations behind it. A large iron needle or pointer is attached to the dial. This pointer is connected with a toothed wheel, which in its turn is connected with certain wires of a galvanic battery, passing along the track. When the engine enters upon section number 1, a temporary connection of the wires is produced, making a completion of the circuit, and causing the index on the dial to move to space number 1. As the engine passes to the second section, the index is moved to the corresponding space on the dial, and so on throughout the station. Thus a conductor, before starting for a depot, can always tell whether any train is on the station before him; and accidents by collision will be rendered almost impossible, except by the most culpable negligence.

List of Patents Issued,

FROM APRIL 11 TO MAY 2.

Stephen Ustick, of Philadelphia, Pa., for improvement in brick-machines. Ante-dated Nov. 18, 1853.

Stephen Waterman, of Williamsburgh, N. Y., for improved circular sawing-machine.

Moses T. Rowlands, of Pittstown, Pa., for improvement in tailors' measures.

J. A. Roth and Joseph Lea, of the county of Philadelphia, Pa., for improvement in machines for bleaching flax.

Matthias P. Coons, of Brooklyn, N. Y., for improvement in iron-fences.

Thomas P. Forsyth, of Dalton, Ind., for improvement in machines for winding and folding cloth.

Garret Meldrum, of West-Philadelphia, Pa., for improved turning-lathe.

Fowler M. Ray, of New-York, for improvement in spiral-springs for railroad-cars.

John D. Seagrave, of Milford, Mass., for improvement in machines for paring apples.

George C. Dixwell, of Boston, Mass., and J. A. Borr, of New-York, for improvement in gas-regulators.

George Aulick, of Winchester, Va., for improvement in car-couplings.

Ari Davis, of Washington, for improvement in box-machine.

Sam'l T. Field, of Worcester, Mass., for improved apparatus for painting window-blinds, etc.

James L. Cathcart, of Washington, for improvement in attaching propellers to the driving-shaft.

G. M. Conner, of Charlton, N. Y., for improved water-wheel.

Geo. W. LaBaw, of Jersey City, N. J., for machine for cleaning blinds, etc.

Wm. Boggett and Geo. B. Pettit, of Westminster, England, for method of heating, warming, and cooking by gas. Patented in England, Oct. 22, 1851.

Chas. De Saxe, of New-York, assignor to Thos. H. Bate, of Brooklyn, N. Y., for improved landing-net for anglers.

Chas. De Saxe, of New-York, assignor to Thos. H. Bate, of Brooklyn, N. Y., for improvement in fishing-rods and floats.

J. H. Fairchild and Sylvanus Richardson, of Jericho, Vt., for improvement in potato-washing machines.

Thomas Armitage, of Philadelphia, Pa., for improved portable-ladder or fire-escape.

Philos Blake, of New-Haven, Conn., for improved oyster-knife.

James Ballard, of Ashtabula, Ohio, for improved splitting-gauges.

Richard M. Bouton, of West-Troy, N. Y., for improved faucet.

David and Samuel K. Flanders, of Parishville, N. Y., for improved fly-trap.

Martin Hallenbeck, of Albany, N. Y., for improvement in grass-harvesters.

Julius C. Hurd, of Medway, Mass., for improvement in cleaning cotton and other fibrous substances.

David A. Hopkins, of Elmira, Mass., for improved ticket-box for railroad cars.

Abram C. Johnson, of Meadville, Pa., for improvement in operating dumping-cars.

Lawson P. Keach, of Baltimore, Md., for improvement in cooking oysters, etc.

Geo. W. Keller, of Philadelphia, Pa., for improved fire-escapes.

Anthony John, of Monroville, O., for improved machine for filling match-frames.

Wm. H. Towers, of Philadelphia, Pa., for improved machine for opening oysters.

Wm. Lapham, executor of Seneca Lapham, deceased, late of Salem, Ohio, for improvement in maize-harvesters.

Josiah Ellis, of Pittsburgh, Pa., for improvement in revolving fire-arms.

James R. Stafford, of Brooklyn, N. Y., for improvement in distilling and condensing apparatus.

Arthur Harvie and Charles Guild, of Cincinnati, Ohio, for improvement in vinous-fermenting in close vessels.

Joseph C. Tiffany, of Coxsackie, N. Y., for improved ditching-plough.

- George W. Glass, of Alleghany City, Pa., for improvement in cast-iron car-wheels.
- Fred. Field, of Adrian, Mich., for improvement in travelling-bridges.
- Wm. E. Milligan, of New-York, for improvement in railroad car-seats.
- John P. Avery, of Stonington, Ct., for improved mode of securing stones in foundations.
- Thos. W. Brown, of Boston, Mass., for improved file or bill-holders.
- Chas. Buss, of Marlborough, N. Y., for improvement in fire-arms.
- Reuben Burdine, of Washington, D. C., for improved rotary-pump.
- Stephen and James A. Bazin, of Canton, Mass., for improvement in machinery for laying rope.
- Henry Clark, of New-Orleans, La., for improvement in machines for feeding sheets of paper to printing-presses.
- George H. Cotton, of Hampstead Road, England, for improvement in portable folding-chair bedsteads. Patented in England, Oct. 5, 1852.
- Geo. C. Jones, of Alna, Me., and Peter King, of Whitefield, Me., for improved wedging-machine.
- Geo. Little, of Utica, N. Y., for improved mode of operating the feeding-table of printing-presses.
- W. Kuhlenschmidt and W. Hauff, of New-York, for improvement in apparatus for feeding paper to printing-machines.
- Daniel R. Prindle, of East-Bethany, N. Y., for improved field-fence.
- Fred. Shaum, of Baltimore, Md., for improvement in glass-furnaces.
- John C. F. Salomon, of Washington, D. C., for improvement in brick-making.
- Albert Spencer, of New-York, and August Loeschner, of Brooklyn, N. Y., for improvement in forming and hardening hat-bodies.
- W. G. Stirling, of Bridgeport, Conn., for improvement in forming roofs.
- Wm. Mt. Storm, of New-York, for improved bullet-moulds.
- Varanes Snell, of North-Bridgewater, Mass., for improvement in machines for cutting and skiving boot-counters.
- De Witt C. Smiley, of New-York, for improvement in oilers for machinery.
- Wm. B. Thomas and Samuel Hickok, of Buffalo, N. Y., for improvement in railroad car-seats.
- Simon Towle, of Pembroke, N. Y., for improved syringe eye-bath.
- Isaac True, of Rochester, Ind., for improved reaction water-wheel.
- C. D. Van Allen, of New-York, for improvement in invalid-bedstead.
- Wm. F. Ketchum, of Buffalo, N. Y., assignor to Rufus L. Howard, of same place, for improvement in guard-fingers of harvesters.
- Isaac M. Singer, of New-York, for improvement in sewing-machines.
- Amos Young, of Georgetown, D. C., for improved method of discharging cargo from canal-boats.
- Nicholas G. Norcross, of Lowell, Mass., for improvement in certain device for constructing strap iron-railing.
- William Mt. Storm, of New-York, for improvement in charges for fire-arms.
- Mahlon Loomis, of Cambridgeport, Mass., for improvement in plates for artificial teeth.
- Mervin T. Landfeur, of Manchester, Conn., for improvement in reed-boxes for musical instruments.
- Halvor Halvorson, of Boston, Mass., assignor to himself and John T. Heard, of same place, for improvement in process of distilling rosin-oil.
- Halvor Halvorson, of Boston, Mass., assignor to himself and John T. Heard, of same place, for improvement in distilling-apparatus.
- John W. Adams, of Thompsonville, Conn., for improvement in spinning cotton.
- William E. Arnold, of Rochester, N. Y., for improvement in the couplings of endless chain horse-powers.
- John Allender, of New-London, Ct., for improvement in operating catches in tool-holders.
- Wm. Ballard, of New-York, for improvement in making ships'-knees.
- Wm. H. Churchman, of Philadelphia, Pa., for improvement in hydraulic-heaters.
- John Crabtree, of Philadelphia, Pa., for improvement in adjusting the packing of pistons in steam-engines.
- Henry W. Farley, of East-Boston, Mass., for improved means of adjusting the valves of locomotive engines.
- John Gallagher, of New-York, for improved cutter for metallic bars and rods.
- Curtis Goddard, of Edinburgh, O., for improved machine for machine bed-pins.
- Robert Hodgkin, of Barnesville, O., for improvement in straw-cutters.
- Archibald C. Ketchum, of New-York, for improvement in car-trucks with adjustable axles.
- Conrad Liebrick, of Philadelphia, Pa., for improvement in trunk-lock hasps.
- Washington F. Pagett, of Stone-Bridge, Va., for improvement in harrows.
- G. M. Patten, of Bath, Me., for improved arrangement of spring-dies in machines for making clinch-rings.
- Wm. B. and Geo. M. Ramsey, of South Strabane, Pa., for improvement in flexible harrows.
- William Robinson, Jr., of Warsaw, N. Y., for improvement in machinery for making rope.
- Sewall Short, of New-London, Ct., for improvement in violins.
- Philander Shaw, of East Abington, Mass., for improvement in air-engines.
- Le Grand C. St. John, of Buffalo, N. Y., for improved hydrodynamic-engine.
- John M. Weare, of Saybrook, N. H., for milkers' protector.
- Elbridge Webber, of Gardiner, Me., for improved rotary planing-knife.
- Asa Weeks, of South-Boston, Mass., for improved expansive-bit.
- Parley Williams, 2d, of Barre, Mass., for improved slotting-machine.
- Seth Whalen, of West-Milton, N. Y., for improvement in hay-knives.

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A new, enlarged and revised edition of ELEMENTARY GEOLOGY. By EDWARD HITCHCOCK, D.D., LL.D., President of Amherst College, and Professor of Natural Theology; with an introductory notice by JOHN PYE SMITH, D.D., of London. Newly and copiously illustrated. 12mo, 418 pages. \$1 25. After the sale of twenty-four editions of this popular scientific work, which has met with general favor as a text book in literary institutions as well as for general readers, the author has now greatly improved the work, much of which is entirely re-written, and has added many new facts, &c., much important matter, especially on surface Geology and Paleontology, and illustrated the whole with nearly one hundred new engravings. Prof. B. Silliman, LL.D., of Yale College, expresses himself convinced of its high value, and recommends it in his lectures. Rev. Prof. Buckland, D.D., F.R.S., in his address before the London Geological Society, praises the book. The publishers have also the highest testimonials of its superior merit from Prof. Mantell, LL.D., F.R.S., F.G.S., &c., &c., of London, author of "The Wonders of Geology," &c., from Prof. Rogers, of the University of Pennsylvania; Prof. Mather, Prof. Bailey, of West Point Military Academy; and from the leading scientific journals of this country, among which are the American Biblical Repository, Silliman's Journal, and the North American Review.

Those who cannot procure the above books through booksellers, will receive them, prepaid, by remitting the above price. TEACHERS who wish to examine them with a view to introduction, will receive them prepaid by remitting half the price; and the most liberal terms will be made to Schools adopting them. Circulars with full particulars sent on application.

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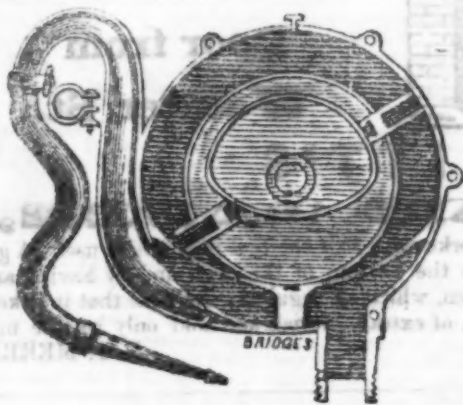
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The Inventor, after thoroughly testing this engine pump, for the past two years, feels confident that it is not equalled by any thing now in market, in the way of raising or forcing water: the motion being rotary, the stream is constant, without the aid of an air vessel. The packing is self-adjusting, very durable, and cannot well get out of order.

These pumps are well calculated for all the purposes for which pumps or hydrants may be used, viz., Factories, Steamboats, Tanneries, Breweries, Distilleries, Railroads, Water Stations, Hotels, Mines, Garden Engines, &c.

Among the many testimonials given of this pump, is a gold medal awarded at the last great Fair of the American Institute.

No. 1 is a house or well pump and domestic Fire Engine, and will raise from 20 to 30 gallons per minute.

No. 2 will raise 100 gallons at 120 revolutions.

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The quantity raised can be doubled, by doubling the revolutions. These machines are manufactured and sold by the subscribers at Brockport, N. Y., also in this city, 48 Courtland street (corner of Greenwich,) by J. C. CARY.

Sept. 18-1y.

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Suites consisting of Bureau with Glass, Wash-stand, Table, Bedstead, and 4 Cane seat Chairs, are offered as low as \$25. With marble tops as low as \$45 the suit and upwards, with the addition of Commode and Rocker to \$160 the set, price

varying according to style and expense of finish. Every article warranted.

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Dec. 1y.

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May 29-1f

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HUDSON RIVER RAILROAD.

SUMMER ARRANGEMENT.

NEW-YORK TO AND FROM ALBANY AND TROY.

On and after Monday, May 29th, 1854, the Passenger Trains will run as follows:

GOING NORTH.—Leave New-York from the office cor. Chambers Street and College Place, at

6.00 A.M. Express train for Albany and Troy, connecting with northern and western trains. Through in four hours from 31st street.

7.00 A.M. Poughkeepsie Way Passenger Train, stopping at all Stations, and carrying the Way Mail from New-York to Poughkeepsie.

9.00 A.M. Mail Train for Albany and Troy, stopping at Peekskill, Garrison's, Cold Spring, Fishkill, New-Hamburg, and at all Mail Stations north of Poughkeepsie.

10.00 A.M. Peekskill Way Passenger Train, stopping at all stations.

12.00 M. Way Train for Albany and Troy, stopping at Yonkers, Tarrytown, Sing Sing, Crugers, Peekskill, Garrison's, Cold Spring, Fishkill, New-Hamburg, Poughkeepsie, Hyde-Park, Rhinebeck, Tivoli, Oakhill, Hudson, Stuyvesant, and Castleton, and connecting with the Express Train leaving Albany at 6.30 P.M. for Buffalo, and at Troy with northern Trains for Montreal.

1.00 P.M. Poughkeepsie Freight and Passenger Train, stopping at all Stations.

3.00 P.M. Peekskill Way Passenger Train, stopping at all Stations.

4.00 P.M. Express Train to Albany and Troy, stopping at Sing Sing, Peekskill, Cold Spring, Fishkill, Poughkeepsie, Rhinebeck, Hudson, connecting at Albany with Western Express Train at 10.30 P.M. for Buffalo.

4.15 P.M. To Poughkeepsie, stopping at all Way Stations.

5.00 P.M. Way Train for Albany and Troy, stopping at Tarrytown, Peekskill, Garrison's, Fishkill, Poughkeepsie and stations north on signal, and connecting at Albany at 10.30 P.M. for Buffalo.

5.30 P.M. To Peekskill, stopping at all Way Stations.

6.30 P.M. Emigrant and Freight Train for Albany and Troy, stopping at all Time Table Stations.

7.45 P.M. From 31st Street, Through Freight Train for Albany and Troy.

11.00 P.M. To Tarrytown, stopping at all Way Stations.

4.30 A.M. Leave Poughkeepsie for Albany, Way Freight and Passenger Train, stopping at all Stations.

GOING SOUTH.—Express Passenger Train for New-York, stopping at Hudson, Rhinebeck, Poughkeepsie, Fishkill, and Peekskill, leave Troy Union Depot at 4.30 A.M.; Albany, 4.45 A.M.

Way Mail and Passenger Train for New-York, stopping at all Mail Stations, leave Troy Union Depot at 5.50 A.M.; Albany, 6.00 A.M.

Express Train for New-York, stopping only at Hudson, Rhinebeck, Poughkeepsie, Fishkill and Peekskill, leave Troy Union Depot at 8.30 A.M.; Albany, 8.45 A.M.

Way Train, stopping at Castleton, Stuyvesant, Coxsack, Hudson, Oakhill, Tivoli, Barrytown, Rhinebeck, Staatsburgh, Hyde Park, Poughkeepsie, New-Hamburg, Fishkill, Cold Spring, Garrison's and Peekskill, leave Troy Union Depot at 10.50 A.M.; Albany, 11.00 A.M.

Way Freight and Passenger Train for Poughkeepsie, stopping at all Stations, leave Albany at 1.45 P.M.

Express Train, stopping only at Hudson, Rhinebeck, Poughkeepsie, Fishkill, Cold Spring, and Peekskill, leave Troy Union Depot at 4.35 P.M.; Albany, 4.45 P.M.

Milk, Freight and Passenger Train, stopping at all Stations on signal, leave Albany at 5.30 P.M.

From East Albany, Through Freight Train, leave Albany at 7.00 P.M.

Leave Poughkeepsie for New-York at 4.30 A.M. Way Freight Train, stopping at all Stations.

6.15 A.M. Way Passenger Train, stopping at Time Table Stations, except Manhattan.

4.00 P.M. Way Passenger Train, stopping at all Stations.

Leave Peekskill for New-York at 6.30 A.M. Way Passenger Train.

8.30 P.M. Way Passenger Train.

Leave Sing Sing for New-York at 6.00 A.M. Stopping at all Way Stations.

Passengers are requested to procure Tickets before entering the cars. Tickets purchased in the cars will be five cents extra. Trains will stop a sufficient time at Poughkeepsie for refreshments.

Freight forwarded to the West and North, as expeditiously, safely and cheaply, as by any other Line.

New-York, Monday, May 29, 1854.

New York and New Haven Railroad.

SUMMER ARRANGEMENT—1854. COMMENCING MAY 15, 1854.

TRAINS FROM NEW YORK.

For New Haven—Accommodation—At 7 and 11 30 A. M. and 4 10 and 5 15 P. M. The 4 P. M. train is Express to Greenwich.

Express—At 8 A. M., 3 and 4 P. M. The 8 A. M. train stops at Stamford and Bridgeport; the 3 P. M. at Stamford, Norwalk and Bridgeport; the 4 P. M. at Stamford.

For Port Chester and Norwalk—Special Accommodation Trains—At 8 45 A. M. & 6 30 P. M. for Norwalk, & 1 30 P. M. & 4 20 P. M. for Port Chester.

For Boston, via Hartford, Springfield & Worcester—Express—At 8 A. M. and 4 P. M. Dine and sup at Springfield.

For Connecticut River, Vermont Railroads, and Montreal—Express—At 8 A. M. Dine at Springfield.

For Accommodation Trains of the New Haven, Hartford and Springfield Railroads—At 11 30 A. M. & 3 P. M.

For Canal R. R.—At 8 A. M. and 11 30 A. M.

For New Haven and New London Railroad—Express at 8 A. M. to New London, Norwich, Stonington and Providence, and 3 P. M. to New London only.

For Housatonic R. R.—Express—At 8 A. M.
For Naugatuck R. R.—Express—At 8 A. M. and 3 P. M.
For Danbury and Norwalk R. R.—Accommodation—At 7 and 8 45 A. M., and Express at 4 10 P. M.

TRAINS TO NEW YORK.

From New Haven—Accommodation—At 5 30, 6 45 and 10 15 A. M. and 4 30 P. M.

Express—At 9 35 A. M. and 1 10, 1 50, & 9 25 P. M.

From Norwalk and Port Chester—Special Accommodation Trains from Norwalk, at 6 A. M.; from Port Chester, at 5 30 A. M., and 3 50 P. M.

See large bill of advertisement at the Station Houses and Hotels.

GEO. W. WHISTLER, Jr., Superintendent.
Vice Pres't. and Supt.'s Office, 37 Canal Street, N. Y.
Asst Supt.'s Office, Station House, New Haven.

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Trains leave Pier foot of Duane St., as follows, viz:
Buffalo Express, at 6 A. M. for Buffalo direct, without change of baggage or cars.

Dunkirk Express at 7 A. M., for Dunkirk.

Mail at 8 15 A. M. for Dunkirk and Buffalo, and intermediate stations.

Way Express at 12 45 P. M. for Dunkirk.

Rockland, Passenger, at 3 P. M. (from foot of Chambers-st.,) via Piermont for Suffern and intermediate stations.

Way Passenger, at 4 P. M. for Otisville and intermediate stations.

Night Express, at 5 P. M. for Dunkirk and Buffalo.

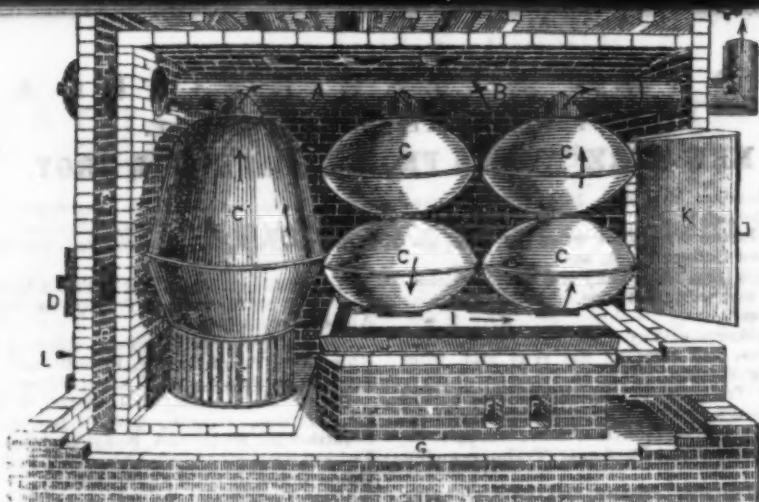
Emigrant Train at 6 P. M.

On SUNDAY only one Express Train, at 6 P. M.

These Express Trains connect at Buffalo with first-class splendid steamers on Lake Erie for all ports on the Lake; and at Dunkirk with the Lake Shore Railroad for Cleveland, Cincinnati, Toledo, Detroit, Chicago, &c.

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EMERSON'S PATENT HOUSE AND CAR VENTILATORS,
POND'S IMPROVED COOKING RANGE.

Dec. 17.

FALL OF 1853.
GREAT CENTRAL THROUGH LINE TO THE WEST!

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| Philadelphia to do. | - - - 11 00 | To do. | - - - 12 00 |
| Baltimore to do. | - - - 10 00 | To do. | - - - 11 00 |
| Washington to do. | - - - 11 00 | To do. | - - - 12 00 |

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BY LAND ROUTE FROM WHEELING, &c.

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| From New York to Columbus, | - - - \$15 62 | To Cincinnati, | - - - \$18 62 |
| Philadelphia to do. | - - - 13 30 | To do. | - - - 16 30 |
| Baltimore to do. | - - - 12 30 | To do. | - - - 15 00 |
| Washington to do. | - - - 13 00 | To do. | - - - 16 00 |

For **THROUGH TICKETS** and general information apply at the following places:

At **NEW YORK**, to J. L. SLEMMER, cor. Park Place and Broadway, opposite the Park and one block above the Astor House.
 At **PHILADELPHIA**, to MR. BLACKWELL, Library St., or to the TICKET SELLER at Balt. R. R. Station, Broad & Prime Sts.
 At **BALTIMORE**, to J. T. ENGLAND, at Baltimore and Ohio Railroad Station.
 At **WASHINGTON**, to T. H. PARSONS, Agent at Railroad Station.

WASHINGTON BRANCH.

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| LEAVE BALTIMORE at | - - - 4 15 A. M. | LEAVE WASHINGTON, for Balt. at | - - - 6 A. M. |
| Do. do. | - - - 9 A. M. | Do. do. | - - - 8 A. M. |
| Do. do. | - - - 3 30 P. M. | Do. do. | - - - 3 1 P. M. |
| Do. do. | - - - 7 P. M. | Do. do. | - - - 5 P. M. |
| On Sunday at | - - - 4 15 A. M. | On Sunday at | - - - 6 A. M. |
| Do. do. | - - - 6 10 P. M. | Do. do. | - - - 5 P. M. |

The **FIRST** and **FOURTH** Trains from Baltimore, and the **SECOND** and **FOURTH** Trains from Washington, will be **Express Mail Trains**—stopping only at Washington Junction and Annapolis.

WHEELER & WILSON MANUFACTURING COMPANY'S

SEWING MACHINE,

MANUFACTURED AT WATERTOWN, CONN.

OFFICE, 265 BROADWAY, NEW YORK.

A. B. WILSON'S PATENT,

(August 12, 1851.)

AND JUNE 15, 1852.



AGENCIES AT
63 COURT ST., BOSTON,
172 CHESTNUT ST., PHILAD'PHIA,
IRON HALL, WASHINGTON.

These Machines have been in successful operation, in the hands of manufacturers and families, for the past two years, and in every case have given universal satisfaction. The Proprietors are now prepared to offer them to the public, with that increased confidence in their merits which the united testimony of their numerous customers has strengthened and confirmed.

These Machines are entirely different from any other, the principles on which they are made being *exclusively* our own.

Among the advantages of this Machine over any others are the following:—

1. The simplicity of its construction, and the ease with which it can be kept in the most perfect order.
2. The perfect manner with which the operator is enabled to stitch and sew the various kinds of work, from the finest linen to the coarsest cloths.
3. It particularly excels in the rapidity with which work can be executed; in that respect it has no equal.
4. The little power required to propel them, enabling even those of the most delicate constitution to use them without injury to their health.

We are now manufacturing a larger sized Machine, more particularly adapted to the sewing of leather, canvas bags, and the heavier kinds of cloths.

An examination of our Machines is respectfully solicited at our Office, 265 Broadway.

Feb. 17.

DEMONET & MEYER'S INFALLIBLE LIQUID HAIR DYE.

This is a new article, just presented to the public. The proprietors have made the human hair the study of their lives, and having had occasion to use the thousand and one specifics which ignorant charlatans palm upon the public, they are able to judge of their injuriousness. After the invention of the present Dye, they for a long while, content to satisfy their own customers, made use of it only in their own business; but its merits becoming known, they were absolutely compelled to bring it before the public. Here it has been but a short time, yet its success has been unprecedented. Requests for the appointment of agents for its sale have poured in by every mail, while the orders for the article itself have almost exceeded the ability of the proprietors to supply. Its merits may be curtly summed up as follows: It is easily applied, and can be used by all without danger, full directions accompanying each bottle. It does not color the hair by scorching, like other preparations, but acts upon it by a newly discovered chemical power. Recent researches show that the hair is triangular, and in its natural state possesses all the powers of the prism. To restore this prismatic virtue is the theory of the Hair Dye. It also gives the fibres their soft and glossy texture, and protects the sacs in which all of them terminate. It does not stain the skin, and is the only compound of the kind upon which perfect reliance can be placed, as it never fails in giving a beautiful and natural black or brown color to the hair, whiskers or eyebrows.

The proprietors are prepared to furnish it in large or small quantities. Price \$1 and \$1 50 per bottle, according to size. Liberal deduction to those who buy to sell again.

In answer to the numerous inquiries from every part of the country, Messrs. D. & M. would say that if there be no agent who sells their Dye in the vicinity where the party wishing it resides, by enclosing \$1 a bottle will be forwarded. Persons sending requests for the agency of it will please state plainly the place or district in which they wish to dispose of it.

DEMONET & MEYERS, Proprietors,

April, '54, tf

No. 13 Courtlandt Street, under the Western Hotel, N. Y. City.

SCRIBNER'S OAK OIL.

This very valuable Family Remedy for the cure of wounds, bruises, cuts, burns, and other diseases of an inflammatory nature, is now regarded as a desideratum in medicine. For inflamed eyes and catarrhal affections this application will be found to be a mild, safe and effectual remedy. For Bleeding Piles there is no application so effectual as the Oak Oil. Diarrhœa, scurvy, rheumatism and chilblains are speedily relieved by its use. For sale by Druggists generally, and by the Proprietors,

April, '54, tf.

DAY & VAN DEUSEN, 114 Chambers Street, New-York.

REMOVAL.

The Office of VAN DEUSEN'S IMPROVED WAHPENE is removed from No. 123 to 114 CHAMBERS ST., where the Proprietors, Day & Van Deusen, invite their friends and patrons and the public at large, to call and procure the above celebrated article.

The Wahpene, as is well known to those who have used it, is not a Dye, gotten up to color the hair transiently; but a medical preparation which penetrates the bulb or root of the hair, promoting a healthy action throughout, and restoring it to its natural fullness of growth. Testimonials of its efficacy, in numerous instances, from sources of the highest respectability, may be seen at the Office, No. 114 Chambers Street.

SUPER PHOSPHATE OF LIME,

FROM THE

EAGLE CHEMICAL WORKS,
OF ST TEN ISLAND.

The Subscriber begs leave to inform the Farmers and Gardeners who have left orders for the above Manure, that he is now prepared to deliver the same, either from the Works on Staten Island, or from the Depot in New York.

Other persons requiring supplies of this well known and valuable fertiliser, are requested to make application early, as the demand for this season will be large.

ALFRED F. KEMP, No. 62 Beaver Street, New-York.

MANHATTAN LIFE INSURANCE COMPANY,

146 BROADWAY, N. Y.

CASH CAPITAL, \$100,000.

DEPOSITED WITH THE COMPTROLLER OF THE STATE FOR THE SECURITY OF ALL POLICY HOLDERS, exclusive of a large and rapidly augmenting Premium Fund.

Persons insuring with this Company, will be entitled to their pro rata share of the first declared dividend. The rates and principles adopted have stood the test of experience, and must secure, beyond contingency, the object

for which Life Insurance is effected,—immediate and permanent aid to the Widow and Orphan.

A. A. ALVORD, President.

C. Y. WIMPLE, Secretary. N. D. MORGAN, Actuary.

AERAM BU BO'S, M.D., Medical Examiner, attends at the office daily, from 2 to 3 o'clock P.M.

Prospectuses to be had at the office gratis. May, 4t.

SIX HUNDRED SPLENDID ENGRAVINGS!

ONE DOLLAR A YEAR.

FIFTY CENTS, SIX MONTHS.

Agriculture, Mechanics, Science, New Inventions and Patents.

THE PEOPLE'S JOURNAL.

An Illustrated Record of Agriculture, Science, Mechanics, Invention, Patents, and Useful Knowledge—published Monthly. Every number contains thirty-two large pages, beautifully printed on fine paper, and PROFUSELY ILLUSTRATED WITH ELEGANT ENGRAVINGS, forming, at the end of each year, two fine volumes, comprising nearly 400 pages, illustrated with about SIX HUNDRED SPLENDID ENGRAVINGS, relating to the above subjects, the subscription price being only ONE DOLLAR A YEAR, or 50 cents a volume. No publication of the kind has ever been produced with such magnificence, or at so cheap a price.

Farmers, Mechanics, Inventors, Manufacturers, and people of every profession, will find in The People's Journal a repository of valuable knowledge peculiarly suited to their respective wants.

TERMS—One Dollar a Year, or 50 cents for six months.

Postage on The People's Journal, 1½ cents per quarter. In Canada, free. A liberal commission to Postmasters and those who will form Clubs. Post-pay all letters and direct to—

ALFRED E. BEACH,

Editor and Proprietor of The People's Journal,
No. 86 Nassau street, New-York.

THE PEOPLE'S PATENT OFFICE.

This well-known establishment is still carried on under the personal superintendence of the undersigned, through whom Patents may be secured both in this and all foreign countries, with the utmost fidelity and dispatch, on very moderate terms.

Persons wishing for advice relative to Patents or Inventions, may at all times consult the undersigned *without charge* either personally at his office, or by letter. To those living a distance, he would state, that all the needful steps necessary to secure a Patent can be arranged by letter. When parties wish to be informed as to the probability of being enabled to obtain Patents, it will be necessary for them to forward by mail a rough outline sketch and description of the invention. No fee or charge is made for such examinations.

Private consultations held daily with Inventors from 9 A. to 5 P. M.

Models from a distance may be sent by express or otherwise.

For further information, apply to or address, post paid.

ALFRED E. BEACH,

Editor and Proprietor of the People's Journal,
Solicitor of American and Foreign Patents.

People's Patent Office, 86 Nassau street, New-York.

May, 21.

AGRICULTURAL WAREHOUSE.



AWARDED FIRST PREMIUM

BY THE

AMERICAN INSTITUTE

In 1846—1848—1849—1850—1852 and 1853,

193 FRONT STREET, N. Y.

WHERE may be found a complete assortment of Agricultural Implements, embracing all the new and most approved styles. Ploughs, of every description, among which are

Moore's Celebrated Premium,"

"EAGLE," "PEACOCK," HALL'S STEEL AND BAR-SHARE,
"MINOR, HORTON & Co's," "DIAMOND PATTERN,"
"CENTRE DRAUGHT," &c., &c.

STRAW CUTTERS,—Patent Self Sharpening Straw Cutters, the best article in use; also "Hovey's," "Sin-

clair's," Greene's," and a variety of other Cutters in general use.

Corn Shellers, Fanning Mills, Horse Power, Threshing Machines, Corn and Cob Mills, Rakes, Hoes, Shovels, Spades, Hay Forks, Manure Forks, &c., &c.,

GUANO, BONE DUST, PLASTER, SUPER PHOSPHATE OF LIME, &c.

Copper, Brass and Iron Wire Cloth.

All of which will be warranted to be of the best quality and sold at the lowest prices.

JOHN MOORE, 193 Front Street.

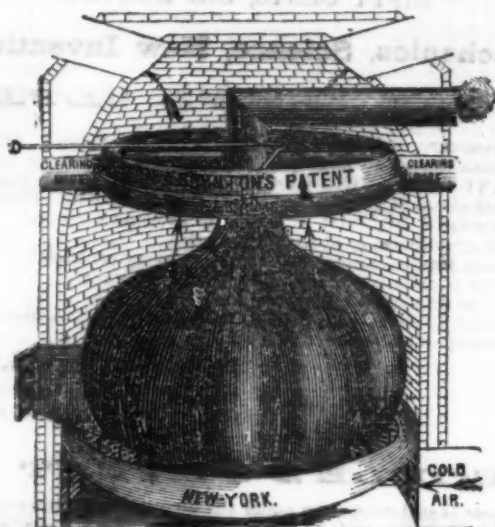
GWYNNE'S

PATENT REACTION CENTRIFUGAL PUMP AND FIRE ENGINE.

Adapted to any situation; unlimited in power; certain in action; permanent in use; and, withal, so low in cost, that they are rapidly superseding all others. Call and be satisfied of these facts at the office and warehouse of UNION POWER COMPANY of U. S., No. 38 Broadway; removed from No. 24, opposite present stand.

June, 11.

M. A. BOYNTON'S VENTILATING HEATER FOR WOOD.



Length, 4 ft. 3 in. | Height, 3 ft. 8 in.
Width, 1 ft. 10 in. | Occupies in brick-work, 5 ft. 6 x 7 ft.

A new and complete **Ventilating Heater**, designed expressly for burning **WOOD**, combining **STRENGTH** and **DURABILITY**, **SIMPLICITY** of Construction, and **ECONOMY** in the use of Fuel, with perfect **EFFICIENCY** in operation.

Is entirely of **Cast Iron**, and with but **one joint** (the body being cast whole), thereby preventing the escape of Gases and Smoke.

The **Fire Chamber** is capacious, will receive wood **FOUR FEET** IN LENGTH, and is so formed as to admit a large amount of fuel, without choking or smouldering the fire.

The entire **RADIATING SURFACE** of the body is large, corrugated in form, and brought in the closest possible contact with the fire at all points; provision being made for the **EXPANSION** and **CONTRACTION** of the iron, without danger of **CRACKING** and **BREAKAGE**.

The **RADIATOR** is of approved construction, located entirely above the body, occupies less space, and affords a larger amount of **Effective Radiating surface** than the corresponding part of any heater in present use.

The above is adapted to all classes of **Public** and **Private Buildings**, can be set in low collars, and possesses peculiarities worthy the examination of those who require a **FIRST-CLASS WOOD HEATER**.



METROPOLITAN COOKING RANGE.

A **NEW** and **SUPERIOR ARTICLE**. Embracing all the modern improvements, equally fitted for the use of **ANTHRACITE** or **BITUMINOUS COAL**, **COKE**, or **WOOD**.

By burning its fuel in a thin stratum over a large surface, and having its **EXTRA LARGE OVEN** elevated to a level with the top of the fire chamber, heated by the upward **NATURAL DRAFT**, and having a revolving grate that clears the fire chamber, without dust, and a powerful **water-back**, affording **Hot Water** for all purposes, with a provision for **Hot Air Fixtures**, for heating other rooms without extra fuel—it becomes at once the most convenient and economical range in use.

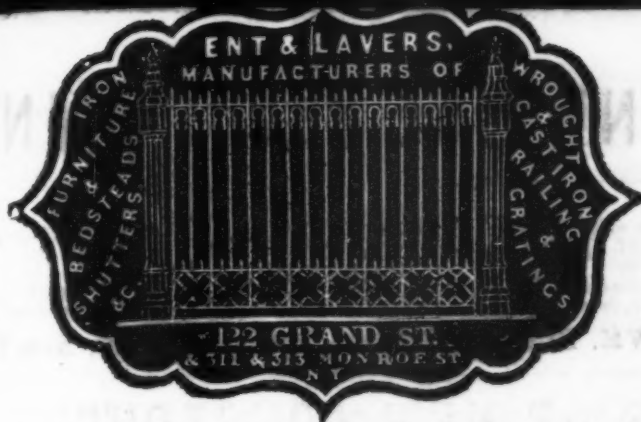
Examinations respectfully solicited.

CHILSON, RICHARDSON & CO.

374 BROADWAY, NEW YORK,

ALSO,

101 and 103 BLACKSTONE-ST. BOSTON.



IRON RAILING WORKS,

Nos. 311 & 313 Monroe St.,
NEW-YORK,

Opposite the Allaire Works.

SALES ROOM,

No. 122 GRAND STREET,

Five doors East of Broadway.

The Subscribers having extensive and unsurpassed arrangements for manufacturing every article in their line are now prepared to offer to the public and dealers throughout the country WROUGHT and CAST IRON RAILING of every description; Gratings, Shutters, Doors; Portable Iron Bedsteads, plain and ornamental; Cribs and Cradles for Children; Iron Chairs, Settees, Wash Stands, Flower and Work Stands, Umbrellas and Hat Stands, &c., &c.; also, a superior quality of of Iron Farm Fence, all of which they will warrant to surpass in strength, durability, beauty of design, and cheapness, the manufactures of any other House in their line. Orders from every section of the United States thankfully received, and executed with the utmost dispatch.

46

ENT & LAVERS, 122 Grand Street, N.Y.

1,000 BOOK AGENTS WANTED, TO SELL PICTORIAL AND USEFUL WORKS FOR THE YEAR 1854.

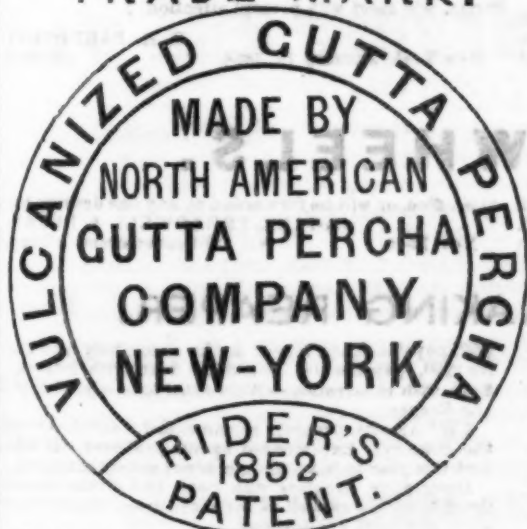
\$1,000 DOLLARS A YEAR?

WANTED, IN EVERY COUNTY OF THE UNITED STATES, active and enterprising men, to engage in the sale of some of the best Books published in the country. To men of good address, possessing a small capital of from \$25 to \$100, such inducements will be offered. For further particulars address, (postage paid,) **ROBERT SEARS, PUBLISHER.**

as to enable them to make from \$3 to \$5 a day profit. The Books published by us are all useful in their character, extremely popular, and command large sale wherever they are offered. Mar.—54. 11.

ROBERT SEARS, PUBLISHER.
181 William Street, New-York.

TRADE MARK.



Highest Medal of World's Fair, and Gold Medal of American Institute, awarded for these goods.

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GUTTA PERCHA GOODS, IN GREAT VARIETY,

Far superior to any other Water-Proof Goods in the market, comprising many desirable articles for EXPORT, and COUNTRY TRADE, consisting in part of Coats, Cloaks, Capes, Ponchos, Overalls, Leggings, Caps, Souwesters, Camp Blankets, Horse Covers, Carriage Cloths, Plane-Covers, Fire Buckets, Travelling Bags, Surgical Articles, Steam Packing, and hundreds of other articles.

These Goods are free from unpleasant odor; very tenacious, pliable and elastic; not injured by fatty substances; and unlike India Rubber, will not decompose and become sticky; are cheaper; different from any other Gutta Percha Fabrics made in this country or Europe, and warranted to stand all climates.

CERTIFICATES—From persons who have tested the goods, may be seen at the store of the Company.
TERMS LIBERAL—Dealers are invited to examine these goods before purchasing elsewhere.
Orders executed to any amount at short notice.

CAUTION.

BASE IMITATIONS, made of VARNISHED INDIA-RUBBER, are already being offered in the market, therefore purchasers should bear in mind that all genuine goods are stamped with the above trade mark of the Company.

WILLIAM RIDER,
Pres't. N. A. G. P. Co.

May, 31.

1

BLAKE'S PATENT FIRE PROOF PAINT

The original and only article that can be sold without infringing the patent, will at all times be kept, both in Oil and in Dry Powder, at 119 PEARL STREET, by the Patentee.

The Patent has just been decided in the United States Court to be good and valid.

In consequence of this decision throwing the entire business into my hands, I shall very materially reduce the price. I can manufacture a large quantity much cheaper, proportionally, than a small one. All infringers will be prosecuted.

June, 1y.

WM. BLAKE, Patentee, 119 Pearl Street, New-York

WRITING TABLES OF NEW CONSTRUCTION

WALLING & HEDGES, No. 252 Ninth Avenue,

Are now manufacturing and offer for sale a new article in the furniture line, combining the desk, table and chair, anything ever before offered to the public, being, when closed up, a fancy centre table, and when opened, a cushioned chair, with desk and writing materials complete, the opening or closing of which requires but one second. This piece of furniture must soon come into general use, as it is well adapted to the parlor, the sitting-room, library, office, school room, court-rooms, council chambers, legislative halls, for students, reporters, &c. The examination of the article is discerning public is particularly solicited. The trade supplied. N. B.—Patent right secured.

S. R. PARKHURST'S

PATENT BURRING MACHINES.

The subscriber, who is the inventor of the

BURRING MACHINES

which are attached to Carding Machines, informs

Woollen and Cotton Manufacturers,

that he has increased facilities for manufacturing superior Burring Machines, and likewise for Second Breakers. In addition to which, manufacturers who prefer the metal

cylinder, invented by J. L. Tuttle, may be supplied with them at short notice.

The subscriber is giving his personal attention to the manufacture of these Machines, which he has not done heretofore.

The legal right for building these Machines is in the subscriber.

Orders addressed to HAYES & REDFIELD, No. 90 Beaver Street, will meet with prompt attention.

New York, January 17, 1854.

S. R. PARKHURST.
Feb. 11.

WATER WHEELS.

The Subscribers offer for sale "Jagger's Improved French Turbine Water Wheel," which they believe to be unrivalled. Circulars and Tables relating to the same may be obtained at

this office, or will be forwarded to any one desiring them. JAGGER, TREADWELL & PERRY,
No. 110 Beaver street, Albany, N. Y.

Nov. 13-54.

ATKINS' SELF-RAKING REAPER.

40 OF these machines were used the last harvest in grass or grain, or both, with almost uniformly good success, in nine different States and Canada.

TWENTY-SIX PREMIUMS,

including two at the Crystal Palace, (silver and bronze medals,) were awarded it at the autumn exhibitions. I am building only 300, which are being rapidly ordered. Mr. Joseph Hall, Rochester, N. Y., will also build a few.

Early orders necessary to insure a reaper.

Price at Chicago \$175—\$75 Cash with order, note for

\$50, payable when reaper works successfully, and another for \$50, payable 1st December next, with interest. \$160 cash in advance.—Warranted to be a good Self-Raking Reaper.

Agents, properly recommended wanted, throughout the country. Experienced agents preferred. It is important this year to have the machines widely scattered.

Descriptive circulars with cuts, and giving impartially the difficulties as well as the successes of the reaper, mailed to post-paid applications.

J. S. WRIGHT,

"Prairie Farmer" Warehouse, Chicago, Feb. 11.

Ammoniated Super-Phosphate of Lime.

This very superior fertilizer, having been fairly tested by farmers and planters, is acknowledged to possess many advantages over Guano. At the same price per ton, and sown in equal quantity, its first effects are equal, if not superior, on most crops, to those of Guano, whilst they

last much longer. It may be applied as a top dress until April with as much benefit as if used at time sowing. Manufactured and for Sale at the Seed and Agricultural Warehouse of C. B. ROGERS, No. 29 Market Street, Philadelphia.

MERRY'S MUSEUM AND PARLEY'S MAGAZINE FOR 1854.

The object in the MUSEUM is to furnish a great variety of useful information on a great many subjects, to form a taste for good reading, a habit of correct thinking, and a character that will make its readers useful and happy.

COMMENDATORY NOTICES.

"Nearer to our standard of perfection than any other work."—*Ohio Clipper*.

"Worth a thousand of the trashy periodicals which children will read if they have nothing better."—*Norwich Courier*.

"Deserving the patronage of every family."

L. BACON, D. D.

"I know not where to look for a more valuable set of books. Their moral influence is decidedly good."

Rev. J. S. ABBOTT.

ALSO

The Mother's Magazine & Family Monitor for 1854.

This is the oldest and most extensively circulated work of the kind in this or any other country. It is designed to be a medium of instruction on the subject of home education, to furnish matter of the highest interest and profit to all the members of the family circle, and especially to aid the Christian mother to train up her child "in the way he should go," maintaining evangelical principles as the basis of its teachings.

COMMENDATORY NOTICES.

"As a work for ladies, and for the family, it has no superior, and we are glad to see it flourish." *N. Y. Evangelist*.

"Has lost none of its original freshness or editorial

ability. We cordially commend this ancient and popular periodical to the parents and guardians of youth." *Relig. Herald, Hartford, Ct.*

TERMS:—The subscription price of each Magazine is One Dollar a year, if in advance; One Dollar and Fifty Cents if payment be delayed till the end of the year. Four copies, \$3; seven copies, \$5; and fifteen copies, \$10.

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The Proprietors are, { STEPHEN T. ALLEN,
ISAAC C. STEARNS,
JOHN N. STEARNS.

Address, S. T. ALLEN & CO.,

May, 21.

116 NASSAU STREET

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Business of every description requiring personal services will be promptly attended to.

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May

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Exhibited by A. C. Hobbs,
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ALSO LOCKS FOR
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SILVER PLATED,
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For French Windows.

SAFES,
Iron Doors and Chests, made
to order.

SILVER PLATING.

DAY & NEWELL,

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NEW-YORK.

Patent

Clover or Timothy Seed Harvester.

NAPTHA A. WAGNER, inventor and proprietor of the
WHEAT HARVESTER, THRESHER and CLEANER, the
Clover, Timothy other Grass Seed Harvesters, & the Clover and
other Grass Seed Huller and Cleaner, offers to the public this
Machine, which is suited, by a change of its parts, to all these
kinds of work, and with the aid of one horse and a boy it will
harvest from 8 to 12 acres a day, mowing, raking, drawing,
breaking, and threshing the heads from the stalks, all at the
same time. Warranted, if properly managed.

Rights for States and Counties for sale on favorable terms,
also the right to manufacture the same. Apply by letter to
the above, 137 Madison Street, N. Y., and Pultney, Steuben
County, N. Y.

The Wheat Harvester is also applicable to Barley, Rye,
Oats, and Rice. Jan. 3d

POULTRY.

To the Poultry Dealers and Fanciers at the South. The
Subscriber is now prepared to fill orders to any extent, for any
known variety of choice imported and domestic Fowls, Geese,
Ducks, Turkeys, Swans, and Pea and Guinea Fowls; and will
sell stock by the pair, trio, or lot, at very reasonable prices.
Those who buy to sell again supplied on favorable terms. I
will warrant all birds sold by me to be equal in all respects to
any in the country. Stock can be safely sent to any part of
the United States. No charge made for cages.

J. W. PLATT, RHINEBECK, NEW YORK.

Agency for the Purchase and Sale of Improved Breeds of Animals.

CATTLE, SHEEP, SWINE, POULTRY, &c.,

Purchased to order and carefully shipped to any part of the United States, for which a reasonable commission will be
charged. The following Stock can be furnished, viz.:

| | |
|--|---|
| Thorough bred Short Horn and Grade Cattle, | Thorough bred Alderney Cattle, |
| Do. Ayrshire Cattle, | Do. Devons do. |
| Do. South Down Sheep, | Do. Cotswold, Oxfordshire or Leicester Sheep, |

Swine and Poultry, very fine, of different breeds. Also, Fine, well-broken Devon Working Oxen.

All letters post-paid will be promptly attended to. Address,

AARON CLEMENT,

South Street, above 9th Street, Philadelphia.

Feb. 54 th.



McFARLAND'S

Improved Fire and Burglar Proof Safes.

New York, Aug. 23, 1853.

Messrs. McFarland & Co.:

THE under signed would respectfully call the attention of the
public to the above unequalled safeguard, proof against the
devouring element of fire, as well as the most successful burglar.

To Merchants, Jewellers and Bank Directors, we would only
say, examine them, and the proofs, and you will be convinced
of their superiority over all others manufactured.

Our business is done in a plain straight forward way, with-
out resorting to humbug or large talk.

Below is one of the many testimonials we are daily receiving
from all parts of the country, and it speaks for itself. Messrs
Pond & Hitchcock's Oil Store was situated directly under the
Pearl Street House, and was totally consumed in that great
fire of Aug. 23d.

Our depot, where an assortment of all kinds and sizes are
constantly on hand, is at 33 MAIDEN LANE,

2 doors from Nassau St., N. Y.

WM. McFARLAND & CO.

GENTS:—It affords us pleasure to inform you that the Fire
and Burglar Proof Safe we purchased of you, preserved our
books and papers at the disastrous fire of the Pearl St. House
last evening, in the most perfect manner. Although it was
covered throughout the fire, with burning Rosin and other oils,
and directly under a broken gas pipe, in the most intense heat,
it remained true to its name, and its contents, when taken out,
were not even scorched, and hardly bore the smell of fire. To
any one in want of a superior Safe, a perfect safeguard against
fire, we cheerfully recommend your manufacture, having had
a personal experience of their excellence.

Yours truly,

POND & HITCHCOCK.

WAREHOUSES.

Boston, Mass., No. 14 Blackstone Street.

Baltimore, Md., No. 7 Commerce Street.

Chicago, Ill., corner South Water and Franklin Sts.

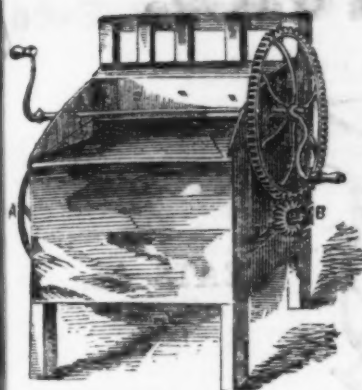
Agents.—Kendall, Richardson & Co., Bath, Me.; Henry Butler, Bangor, and T. McFarland, Richmond, Me.

Portland, Oregon, 37 Front Street.

San Francisco, Cal., 27 California Street.

Port Phillip, Australia, 19 West Street.

Jan 13



MUMMA'S PREMIUM CORN SHELLER.

PATENTED JUNE 12, 1849.

This sheller is better adapted to the wants of the farmer than any other, as it is simple and durable, not being liable to get out of order, and will shell new or old Corn, large and small ears perfectly clean, separating the cob from the corn. It runs light by hand, as with it a man and boy can shell 130 bushels per day—or two men 225—or with one horse from 400 to 500.

It is also easily converted into an excellent apple and vegetable grinder, which is certainly of great advantage, as it has recently been ascertained by actual experiment, the vegetables, when ground into a pulp, go much further and produce more flesh than when cooked. It is also much safer to feed stock with ground instead of cut vegetables, as the sharp corners when cut, are apt to choke the animal.

This Machine has met with the universal approbation of all classes of men wherever introduced. It was awarded the *first premium*, a heavy SILVER MEDAL, at the Great Fair of the Maryland Institute, held in Baltimore, October, 1850.

It also received the *highest premium* at the State Fair of Pennsylvania, in 1861.

The Subscriber having purchased the Patent Right of the above Sheller for all the United States and Territories, will sell Township, County or State rights, on reasonable terms.

E. ROBINSON.

Greencastle, Franklin Co., Pa., Nov., 1853.

and at the State Fair of Kentucky, in 1852, and at the State Fair of Michigan in 1853, and at the Agricultural Fair of Franklin Co., Pa., and at the State Fair of Virginia at Richmond, in 1853, also, a beautiful SILVER MEDAL at the American Institute in New York, in 1853.

BRIGGS & VICKERE,

MANUFACTURERS OF

**Plain, Ornamental & Enameled Chamber Furniture,
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A FERTILIZER of the most approved quality, producing all the immediate effect of the best Peruvian Guano, with the advantage of being much more lasting in the soil. Thoroughly tested, and found to more than realize the expectations of all those who have already tried it. The best evidence of this is the largely increased demand this season over the past year. Put

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For the South, it presents many advantages, among which are its non-liability to be affected by atmospheric heat, and its low price, costing from \$25 to \$200 per suit, comprising Dressing Bureau with glass, Bedstead, Wash-hand Stand, Commode, Toilet Table, Towel Stand, four Chairs and Nurse Rocker.

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DESKS,
TABLES,



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IMPROVED DESKS AND CHAIRS,

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PERHAM OUTDONE!!

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We would particularly appeal, knowing the efficiency of their services when energetically directed. By their co-operation our subscription list would soon out-number any paper published on this continent, and to gain this we shall at all times strive to embody in the columns of the *Guide*, something to not only please, but instruct our female patrons. Our subscription price being so low, there will be but little difficulty in their procuring for us enough subscribers to obtain any of the *Rich Premiums* above described, and what lady would not desire a handsome GOLD WATCH, LOCKET, BRACELET, PEN and PENCIL?

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